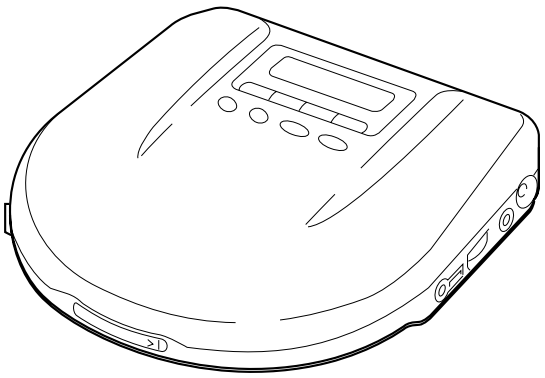
D-E505/E554

SERVICE MANUAL

Ver 1.1 1999. 02



Canadian Model
E Model
Australian Model
Chinese Model
D-E554
Tourist Model
D-E505

Model Name Using Similar Mechanism	D-E700/E705
CD Mechanism Type	CDM-2911DBB/2911EBA
Optical Pick-Up Name	DAX-11D/11E

SPECIFICATIONS

CD player section

System
Compact disc digital audio system

Laser diode properties
Material: GaAlAs
Wavelength: λ=780 nm
Emission duration: Continuous
Laser output: Less than 44.6 µW (This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

Error correction
Sony Super Strategy Cross Interleave Reed Solomon Code

D-A conversion
1-bit quartz time-axis control

Frequency response
20 – 20,000 Hz $^{+1}_{-2}$ dB (measured by EIAJ CP-307)

Output (at 4.5 V input level)
Headphones (stereo minijack)
15 mW + 15 mW at 16 ohms
Line output (stereo minijack)
Output level 0.7 V rms at 47 kilohms
Recommended load impedance over 10 kilohms
Optical digital output (optical output connector)
Output level: –21 to –15 dBm
Wavelength: 630 – 690 nm at peak level

General

Power requirements
For the area code of the model you purchased, check the upper left side of the bar code on the package.
- Two Sony NH-DM2AA rechargeable batteries: 2.4 V DC
  Two Sony NC-DMAA rechargeable batteries: 2.4 V DC
- Two LR6 (size AA) batteries: 3 V DC
- AC power adaptor (DC IN 4.5 V jack):
  Canadian model: 120 V, 60 Hz
  E13 model: 220 – 230 V, 50/60 Hz
  Australian model: 240 V, 50Hz
  Tourist/E33 model: 100 – 220 V, 50/60 Hz
  Hong Kong model: 220 V, 50/60 Hz
  Chinese model: 220 V, 50 Hz
- Sony DCC-E245 car battery cord for use on car battery: 4.5 V DC

Dimensions (w/h/d) (without projecting parts and controls)
Approx. 131.8 × 23.9 × 142.0 mm
($5\,^{1}/_{4} \times ^{31}/_{32} \times 5\,^{5}/_{8}$ in.)

Mass (without rechargeable batteries)
Approx. 200 g (7.0 oz)

Operating temperature
5 ˚C – 35 ˚C (41 ˚F – 95 ˚F)

Supplied accessories

For the area code of the model you purchased, check the upper left side of the bar code on the package.
AC power adaptor (1)
Earphones with remote control (1)
AC plug adaptor (1)*
Carrying case (1)
* Supplied with Tourist, E33 and E13 models

Design and specifications are subject to change without notice.

- Abbreviation
  E13: 220 – 230 V AC area in E model
  E33: 100 – 240 V AC area in E model

COMPACT DISC COMPACT PLAYER

MICROFILM

SONY®

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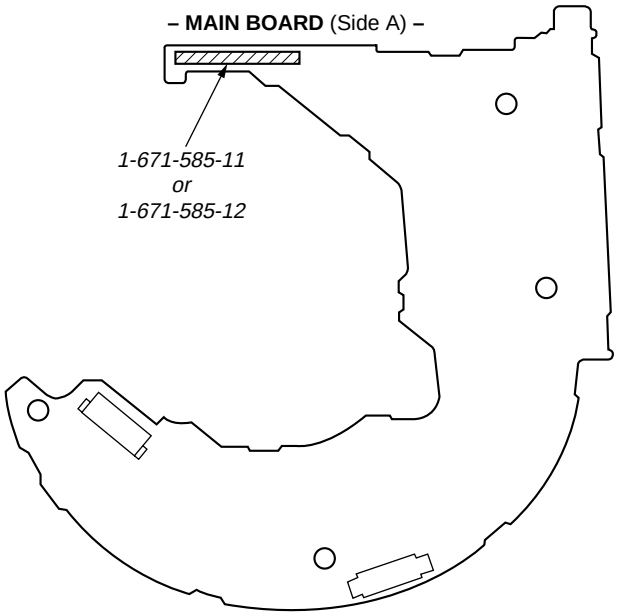
This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Discrimination of MAIN board



MAIN Board	1-671-585-11	1-671-585-12
CD Mechanism Type	CDM-2911DBB	CDM-2911DBB or CDM-2911EBA
Optical Pick-Up Name	DAX-11D	DAX-11D or DAX-11E

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board. (within 3 times)
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

Befor Replacing the Optical Pick-Up Block

Please be sure to check thoroughly the parameters as par the "Optical Pick-Up Block Checking Procedures" (Part No.: 9-960-027-11) issued separately before replacing the optical pick-up block. Note and specifications required to check are given below.

- FOK output: IC501 ⑫ pin
  When checking FOK, remove the lead wire to disc motor.
- S curve P-to-P value: 0.6 to 1.8 Vp-p IC501 ㉛ pin
  When checking S curve P-to-P value, remove the lead wire to disc motor.
- RF signal P-to-P value: 0.8 to 1.2 Vp-p
- Traverse signal P-to-P value: 1.2 Vp-p
- The repairing grating holder is impossible.

Precautions for Checking Emission of Laser Diode

Laser light of the equipment is focused by the object lens in the optical pick-up so that the light focuses on the reflection surface of the disc. Therefore, be sure to keep your eyes more then 30 cm apart from the object lens when you check the emission of laser diode.

Laser Diode Checking Methods

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper panel is closed while turning ON the S801. (push switch type)
The following two checking methods for the laser diode are operable.

- **Method (In the service mode or normal operation): Emission of the laser diode is visually checked.**

1. Open the upper lid.
2. Push the S801 as shown in Fig. 1.
3. Press the ▶II key.
4. Check the object lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up.
   During normal operation, the laser diode is turned ON about 2.5 seconds for focus searching.

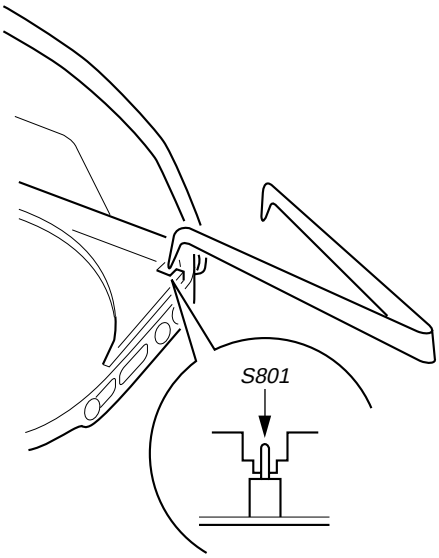


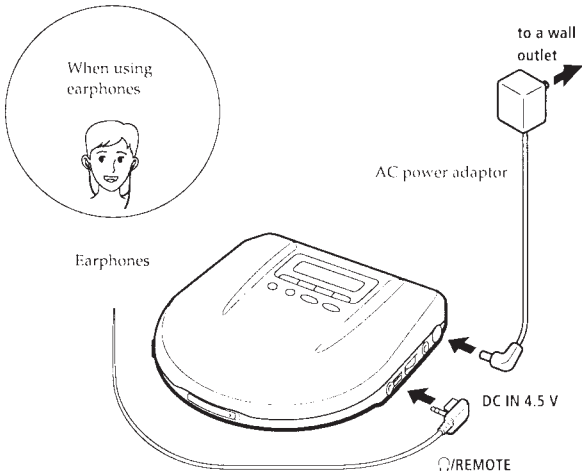
Fig. 1 Method to push the S801

This section is extracted from instruction manual.

Playing a CD right away!

If you want to play a CD right now, choose to use your player on house current. Other choices are the following three: rechargeable battery, dry batteries (see "Power Sources" on the reverse side) and car battery.

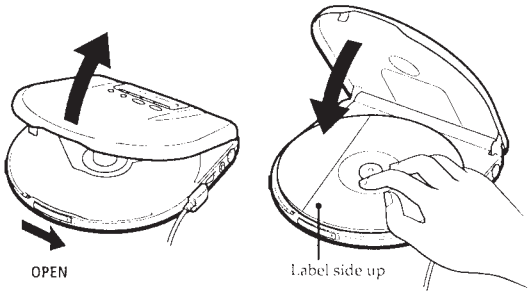
1 Connect



For models supplied with the AC plug adaptor
If the AC power adaptor does not fit the wall outlet, use the AC plug adaptor.

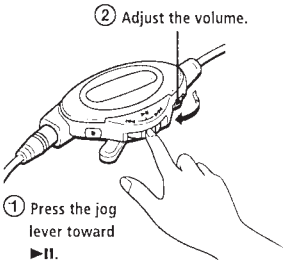
For models supplied with the remote control
- Connect the plug of the earphones to the remote control.
- Connect the earphones to the remote control firmly. A loose connection may cause noise during playback.

2 Place a CD



① Slide OPEN to open the lid.
② Fit the CD to the pivot.
③ Close the lid.

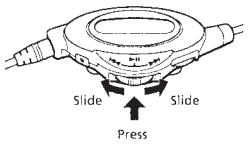
3 Play



To use the player

To stop play, press ■.

To use the remote control
The lever marked with I◄◄-►II-►►I is the jog lever. When you press or slide the lever, operation starts.



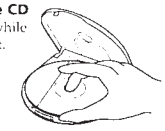
To	Do this
Pause	Press the jog lever toward ►II.
Resume play after pause	Press the jog lever toward ►II.
Find the beginning of the current track (AMS*)	Slide the jog lever toward I◄◄ once.**
Find the beginning of previous tracks (AMS)	Slide the jog lever toward I◄◄ repeatedly.**
Find the beginning of the next track (AMS)	Slide the jog lever toward ►►I once.**
Find the beginning of succeeding tracks (AMS)	Slide the jog lever toward ►►I repeatedly.**
Go forward quickly	Slide and hold the jog lever toward ►►I.**
Go backwards quickly	Slide and hold the jog lever toward I◄◄.**

*AMS = Automatic Music Sensor
**These operations are possible during both play and pause.

If you press RPT/ENT (REPEAT/ENTER on the player) to display " ", you can locate the tracks continuously in the following order:
- When using ►►I: next track → next track ..... last track → first track → second track .....
- When using I◄◄: previous track → previous track ..... first track → second track .....

You can do the operations shown in the above table using the buttons with the same marks on the player.

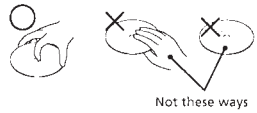
To remove the CD
Remove the CD while pressing the pivot.



Notes on controlling the volume with the remote control
Set the VOL (volume) control on the remote control to the maximum. Then adjust the volume on the player to the level that you want to be the maximum volume of the remote control.

Notes on display
- When you press ►II (when RESUME is set to OFF), the total number of tracks in the CD and the total playing time appear for about 2 seconds.
- During play, the track number and the elapsed playing time of the current track appear.
- During pause, the elapsed playing time flashes in the display.
- Between tracks, the time to the beginning of the next track will appear with the "–" indication.

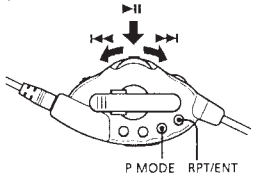
Notes on handling CDs
- To keep the CD clean, handle it by its edge. Do not touch the surface.
- Do not stick paper or tape onto the CD.
- Do not expose the CD to direct sunlight or heat sources such as hot air ducts. Do not leave the CD in a car parked under direct sunlight.



►*Other Operations*

Playing tracks repeatedly (Repeat Play)

You can play tracks repeatedly in normal, INTRO PGM, shuffle or RMS (Random Music Sensor) play modes. Repeat all the tracks or only one track.



To repeat all the tracks
Press RPT/ENT (REPEAT/ENTER on the player) during play.
The " " indication appears.

To cancel repeat play, press RPT/ENT again.

To repeat a single track
1 Press RPT/ENT while the track you want to repeat is playing.
The " " indication appears.

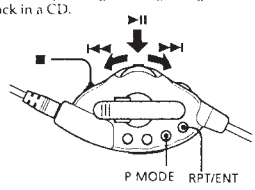
2 Press P (play) MODE (PLAY MODE on the player) repeatedly until "1" appears.

To repeat another track, slide the jog lever toward I◄◄ or ►►I.

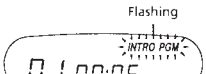
To cancel repeat play, press RPT/ENT again.

Playing only the tracks you want (INTRO PGM Play)

You can choose and play your favorite tracks by scanning through the beginning of each track in a CD.



1 During play, press P MODE repeatedly until "INTRO PGM" flashes.



2 Press the jog lever toward ►II to start scanning.
The player plays about the first 15 seconds of each track and "INTRO PGM" flashes faster.

3 Press RPT/ENT while the track you want is playing. To skip the track, slide the jog lever toward ►►I or just wait for the next track.

After you have gone through the CD, "INTRO PGM" stops flashing and the tracks you have chosen play automatically.

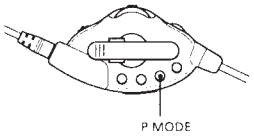
To finish programming before going through the whole CD, press the jog lever toward ►II. The selected tracks will be played.

If you press ■, the program will be erased. To prevent accidental erasure, set the RESUME switch at the rear of the player to ON.

To cancel INTRO PGM play, press P MODE repeatedly until the play mode indication disappears from the display.

Playing tracks in random order (Shuffle Play)

You can play the tracks in a CD in random order.



During play, press P MODE repeatedly until "SHUF" appears.
The tracks play in random order.

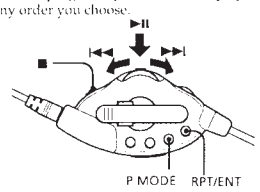
To cancel shuffle play, press P MODE repeatedly until the play mode indication disappears from the display.

Note

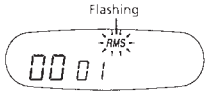
- During shuffle play, you cannot return to previous tracks by sliding the jog lever toward I◄◄

Playing tracks in the order you want (RMS play)

You can program up to 22 tracks to play in any order you choose.

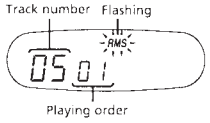


1 During play, press P MODE repeatedly until "RMS*" flashes.



*RMS = Random Music Sensor

2 Slide the jog lever toward I◄◄ or ►►I to choose a track.
The track number and the playing order appear.



3 Press RPT/ENT to program the track.

4 Repeat steps 2 and 3 to program the remaining tracks.

5 Press the jog lever toward ►II.
"RMS" stops flashing and the tracks you have chosen play in the order you specified.

If you press ■, the program will be erased. To prevent accidental erasure, set the RESUME switch at the rear of the player to ON.

To cancel RMS play, press P MODE until "RMS" disappears from the display.

To check the program

During programming:
Press RPT/ENT before step 5.
During RMS play:
Press P MODE repeatedly until "RMS" flashes, then press RPT/ENT.
Each time you press RPT/ENT, the track number and the playing order appear in the order you specified.

Note

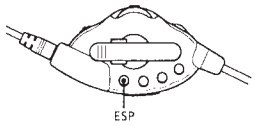
- If you program another track after the 22nd track, the first track programed is cleared and the new track is programed instead.

Using other functions

To minimize skipping (ESP²)

The ESP (Electronic Shock Protection) function minimize skipping by using a buffer memory that stores music data and plays it back in the event of a shock.
The new ESP² (ESP Squared) system uses a new DSP (Digital Signal Processor) which can read and store music data more efficiently, providing a level of continuous skip protection not found in traditional buffer memory units. This decreases the frequency of sound skipping and the need to utilize the buffer memory. Use this function when listening in a car or while walking.*

* Although ESP² provides excellent protection against skipping, it will not prevent skipping while jogging or running.



Press ESP.
The ESP indication appears.

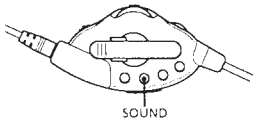
To release the ESP function, press ESP again.

Notes

- Playing may stop when the player gets a strong shock even with the ESP function on.
- You may hear a noise or sound skip when:
  — listening to a dirty or scratched CD,
  — listening to an audio test CD or,
  — the player receives continuous shock.
- Sound may drop for a while if you press ESP during play.
- When you use an optical digital connecting cord, the ESP function will be disabled.

To enjoy more powerful bass sound (Sound function)

You can enjoy a powerful bass-boosted sound.



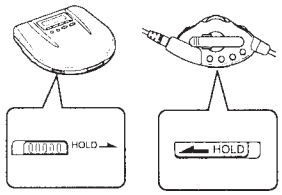
Press SOUND to select "MB (Mega Bass)" or "GRV (Groove)." "GRV" is more effective.

Note

- If the sound is distorted when emphasizing bass, turn down the volume.

To lock the buttons

You can lock your player against any accidental operations.
You can still operate the player with the remote control.



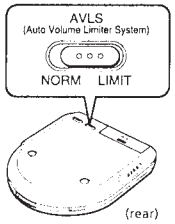
Slide HOLD in the direction of the arrow.
When you press any button, "*Hol d*" appears in the display and you cannot operate the player.

To unlock, slide HOLD back.

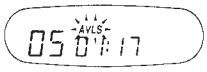
Continue to the reverse side →

To protect your hearing (AVLS)

The AVLS (Automatic Volume Limiter System) function keeps down the maximum volume to protect your ears.



Set AVLS to LIMIT.
The AVLS indication appears.

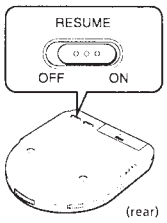


Note

- If you use the SOUND function and the AVLS function at the same time, sound may be distorted. If this happens, turn down the volume.

To resume playing from the point you stopped the CD (Resume Play)

Normally, every time you stop and play, playing starts from the beginning of the CD. The resume play function, however, lets you listen to from the point at which you last turned off the player.



Set RESUME to ON.

To cancel resume play, set RESUME to OFF.

Notes

- Even if RESUME is set to ON, playing starts from the beginning when you open the lid.
- The resume point may be inaccurate by about 30 seconds.

To turn off the beep

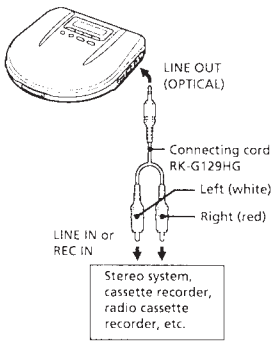
You can turn off the beep that sounds as you operate your player.

Disconnect the power source (AC power adaptor, rechargeable battery or alkaline batteries). While you press and hold down ■, connect the power source again. To make the beep sound again, disconnect the power source, and then connect it without pressing ■.

Connecting to other stereo equipment

You can listen to the CD through other stereo equipment or record a CD on a cassette tape or a MiniDisc. Refer to the instruction manual of the other equipment for details. Before making connections, turn off each piece of equipment.

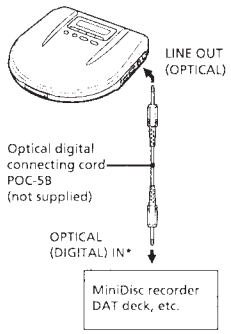
Using the connecting cord



Note

- When you use a connecting cord, the SOUND function will be disabled.

Using the optical digital connecting cord



*If the OPTICAL (DIGITAL) IN jack is square-shaped, use the POC-5AB optical digital connecting cord instead.

Notes on connecting to other stereo equipment

- Before you play the CD, turn down the volume of the connected equipment so as not to damage the connected speakers.
- The beep sound is not output from the LINE OUT (OPTICAL) jack.
- When you connect other equipment to the LINE OUT (OPTICAL) jack of this player, adjust the volume on the connected equipment.
- When you record a CD on a cassette tape using a tape recorder that has the blank search function, release the ESP function. If the ESP function is on, the blank search function does not work.
- Use the AC power adaptor for recording. If you use the rechargeable batteries or dry batteries as a power source, batteries may become weak during recording.

Recording with optical digital connection

Record a CD on a MiniDisc, DAT, etc., according to the following procedure.

1 Press ►II on the player to start play.
2 Press ►II again to pause.
3 Press I◄◄ / ►►I to select the track you want to record.
4 Press ● (record) on the MiniDisc recorder, DAT recorder, etc.
5 Press ►II on the player to release pause.

Notes

- Connect the optical digital connecting cord while the player is in stop mode.
- If you record without pausing the player, some CD may have problem with recording the first track number correctly.
- The SOUND function works on the output from the ♫/REMOTE jack, but does not work on that from the LINE OUT (OPTICAL) jack.
- When use an optical digital connecting cord, the ESP function will be disabled.

Playing a CD in a car

You can use your player in a car by connecting it to the car cassette deck.

You cannot use the car mount plate for this player.
When you use the player in a car, install it securely in a location which does not interfere your driving.

To connect your player to a car cassette deck, you need the following accessories:
- Car connecting pack CPA-9
- Car battery cord DCC-E245

or,
- Car battery cord with car connecting pack DCC-E26CP

Refer to the instruction manual of each accessory for details.

Notes

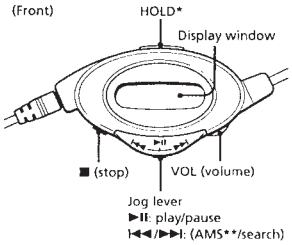
- Do not put the player on the dashboard.
- Do not leave the player in a car parked under sunlight.
- Use a Sony car connecting pack for reducing noise.
- Use only the car battery cord listed in the recommended accessories. If you use any other car battery cord, smoke, fire or malfunction may occur.

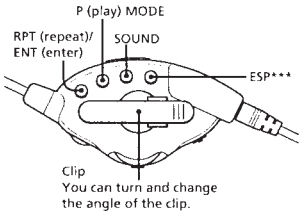
Switched ignition function (when using the car battery cord)

With this feature, your player stops automatically when you turn off the engine of the car. (This function is not possible with some cars depending on the model).

Using the supplied remote control

You can use the remote control as the wired remote control.





* When you are not using the remote control, slide HOLD in the direction of the arrow to prevent any accidental operations.
To unlock, slide HOLD back.
** Automatic Music Sensor
***Electronic Shock Protection

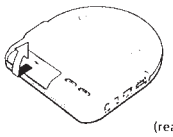
Note
• Use only the supplied remote control. You cannot operate this player with the remote control supplied with other models.

►Power Sources

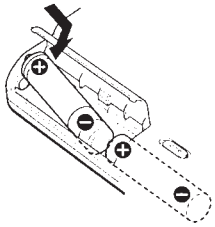
Using rechargeable batteries

Charge the rechargeable batteries before using them for the first time.
Use the NH-DM2AA or NC-DMAA rechargeable batteries for this player. You cannot use any other rechargeable batteries.

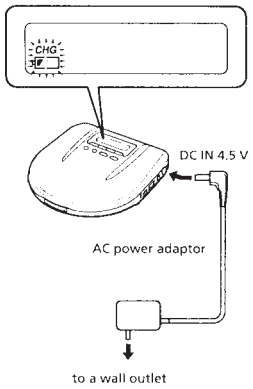
1 Open the lid of the battery compartment.



2 Insert two rechargeable batteries by matching the ⊕ and ⊖ to the diagram inside the battery compartment and close the lid.



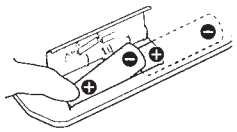
3 Connect the AC power adaptor.
The indication "CHG" lights up. Charge for about 4 hours.
(If the battery has been already charged, "CHG" and flash.)



4 When fully charged, "CHG" disappears. Disconnect the AC power adaptor.

To take out the rechargeable batteries

Take out the batteries in the proper way as illustrated inside the lid or shown below.



When to charge the rechargeable batteries

When the rechargeable batteries become weak, indication appears in the display. If the "Lo batt" appears in the display, charge the rechargeable batteries, because the batteries are used up.
To keep the original battery capacity for a long time, recharge the batteries when the batteries are used up (discharged).

When carrying the rechargeable battery

Make sure to use the battery carrying case (supplied with the rechargeable battery).
If you carry the rechargeable battery with a metal object, short circuit, smoke or fire may occur.

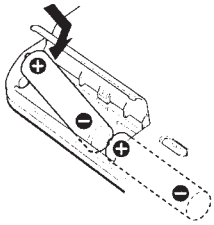
Notes
• Charging time varies depending on how the rechargeable battery is used.
• If the battery is new or has not been used for a long time, it may not be charged completely until you charge and discharge it several times.
• If the battery life becomes shorter by about half, replace it with Sony NH-DM2AA/NC-DMAA rechargeable battery. Do not use any other rechargeable battery.

Using dry batteries

Insert the batteries properly in the same way as the rechargeable batteries.

1 Disconnect the AC power adaptor and open the lid of the battery compartment.

2 Insert two LR6 (size AA) alkaline batteries by matching the ⊕ and ⊖ to the diagram inside the battery compartment and close the lid.



Note
• Do not use manganese batteries for this player.

To take out the dry batteries

Take out the batteries properly in the same way as the rechargeable batteries.

When to replace the dry batteries

When the battery becomes weak, indication appears in the display. If the batteries are used up, "Lo batt" appears in the display. Replace all the batteries with new ones.

Notes
• Do not charge the dry batteries.
• Do not mix new batteries with old ones.
• Do not use different types of batteries together.
• When the batteries are not to be used for a long time, remove them.
• If the battery leakage occurs, wipe off any deposit in the battery compartment, and install new batteries.

Battery life (approx. hours) (EIAJ*)

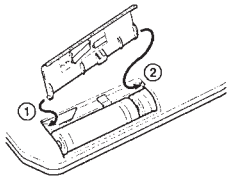
Battery life varies depending on how the player is used.

When using	ESP function off	on
Two NH-DM2AA (charged for about 4 hours**)	12	11
Two NC-DMAA (charged for about 4 hours**)	7	6
Two alkaline batteries LR6SG	20	18

*Measured value by the standard of EIAJ (Electronic Industries Association of Japan) (When you use the player on a flat and stable place; When you do not use the optical digital connecting cord)
**Charging time varies depending on how the rechargeable battery is used.

How to attach the battery compartment lid

If the battery compartment lid is detached by an accidental drop, excessive force, etc., attach it as illustrated in the numbered order.



►Additional Information

Precautions

On safety

• Should any solid objects or liquid fall into the player, unplug it and have it checked by qualified personnel before operating it any further.
• Do not put any foreign objects in the DC IN 4.5 V (external power input) jack.

On power sources

• When you are not using the player for a long time, disconnect all power sources from the player.

On the AC power adaptor

• Use only the supplied AC power adaptor. If your player is not supplied with it, use AC-E45HG AC power adaptor. Do not use any other AC power adaptor.

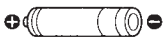
Polarity of the plug

• To unplug the AC power adaptor from the wall outlet, grasp the adaptor itself, do not pull its cord.

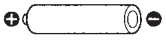
On dry and rechargeable batteries

This player is designed so that it cannot charge any other rechargeable batteries or dry batteries for safety reasons.

Optional rechargeable batteries NH-DM2AA/NC-DMAA



Other rechargeable batteries or dry batteries



When you replace the rechargeable batteries with new ones, make sure to use the NH-DM2AA/NC-DMAA rechargeable batteries.

• Do not throw the batteries into fire.
• Do not carry the batteries with coins or other metallic objects. It can generate heat if the positive and negative terminals of the battery are accidentally contacted by a metallic object.
• Do not mix rechargeable batteries with dry batteries.

On the player

• Keep the lens on the player clean and do not touch it. If you do so, the lens may be damaged and the player will not operate properly.
• Do not put any heavy object on top of the player. The player and the CD may be damaged.
• Do not leave the player in a location near heat sources, or in a place subject to direct sunlight, excessive dust or sand, moisture, rain, mechanical shock, unleveled surface, or in a car with its windows closed.
• If the player causes interference to the radio or television reception, turn off the player or move it away from the radio or television.
• Do not wrap the player in a cloth or blanket during use as it may cause malfunction or serious accidents.

On headphones/earphones

Road safety
Do not use headphones/earphones while driving, cycling, or operating any motorized vehicle. It may create a traffic hazard and is illegal in some areas. It can also be potentially dangerous to play your headsets at high volume while walking, especially at pedestrian crossings. You should exercise extreme caution or discontinue use in potentially hazardous situations.

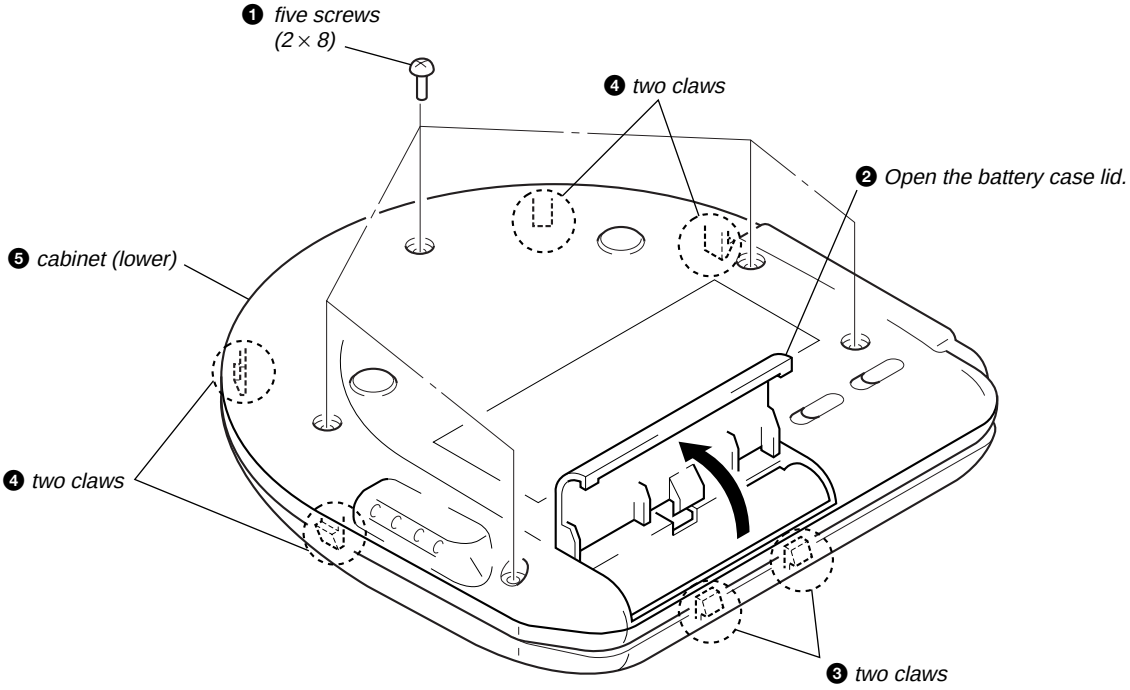
Preventing hearing damage
Avoid using headphones/earphones at high volume. Hearing experts advise against continuous, loud and extended play. If you experience a ringing in your ears, reduce volume or discontinue use.

Caring for others
Keep the volume at a moderate level. This will allow you to hear outside sounds and to be considerate to the people around you.

SECTION 3
DISASSEMBLY

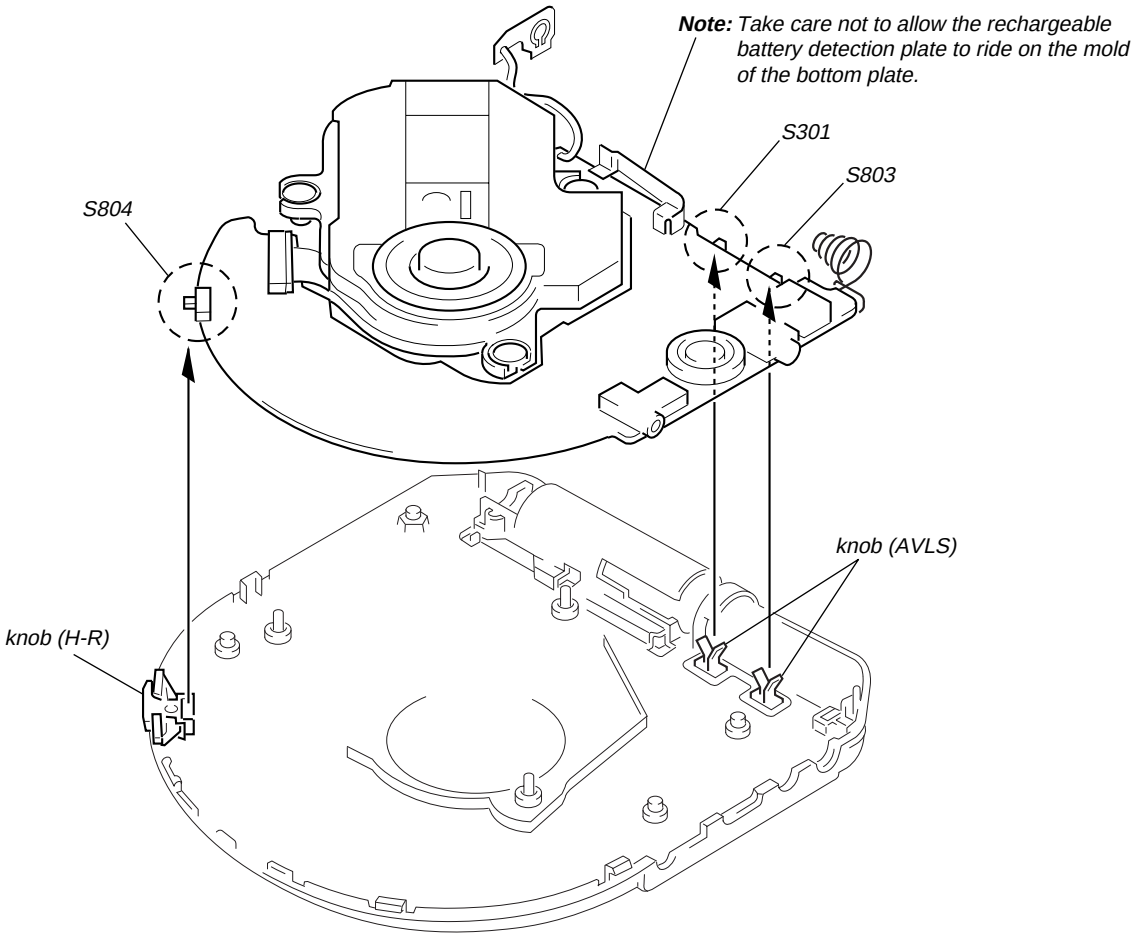
Note: Follow the disassembly procedure in the numerical order given.

CABINET (LOWER)



INSTALLATION MAIN BOARD

On installation MAIN board adjust the S301, 803, 804, and knob (H-R, AVLS).

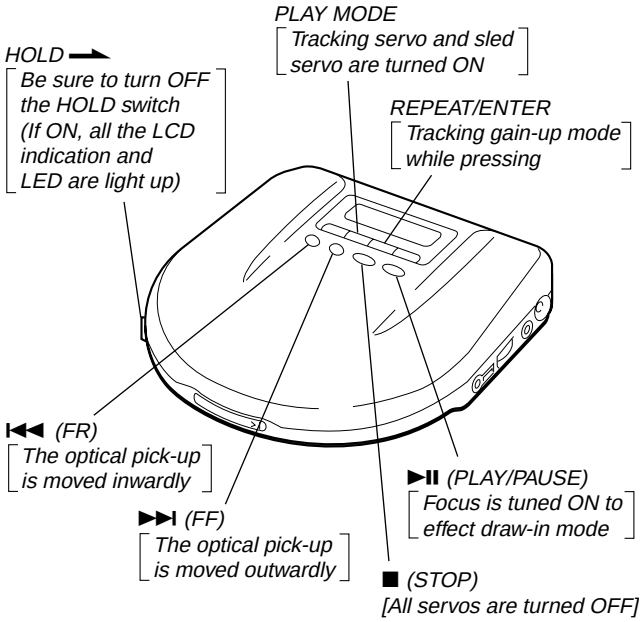


SECTION 4
SERVICE MODE

Service Mode (Service program)

The equipment is provided with a service program built in the microcomputer, like conventional models.

Service program operation methods are described in the following.



Descriptions in [ ] indicate major operations in the service mode. For more informatrion, see Step 2.

Fig. 1 Layout of each key

• Step 1 (Service mode setting methods)

1. Turn OFF the HOLD switch with external power supply disconnected. (power is not applied to the set)
2. Solder across the TEST terminals (TAP802). (pin ⑭, IC801 (ESPSL/TEST) is grounded)
3. Connect an external power supply.

   Thus, the set is switched to the service mode.

• Step 2 (Operation in the service mode)

1. Once the service mode is effected, the LCD displays 5 indications each of which is repeatedly displayed.
   However, the following operations can be activated even if LCD indication is effected.
2. By pressing the ⏭ or ⏮ key, the optical pick-up is movable inwardly or outwardly. However, if this is activated, tracking servo and sled servo are turned OFF, so it can be turned ON by pressing the PLAY MODE key if required.
3. By pressing the REPEAT/ENTER key, the tracking gain-up mode becomes active.
4. By pressing the ⏯ key, focus is turned ON from focus searching while entering CLV-S. (draw-in mode)
   Without disc, focus searching is repeated continuously.
5. By pressing the PLAY MODE key, tracking servo, sled servo and CLV-A (servo in PLAY) are turned ON.
6. When step 4 and 5 are performed, playing begins. No muting is ON in the service mode.
7. By pressing the ■ key, all servos (focus, tracking and sled) are turned OFF. However, the disc motor revolves for a while by inertia.

• Step 3 (Resetting of service mode)

1. Be sure to disconnect the external power supply and remove the solder bridge at the TEST terminals connected before in setting.
2. The set thus becomes available for normal operation.

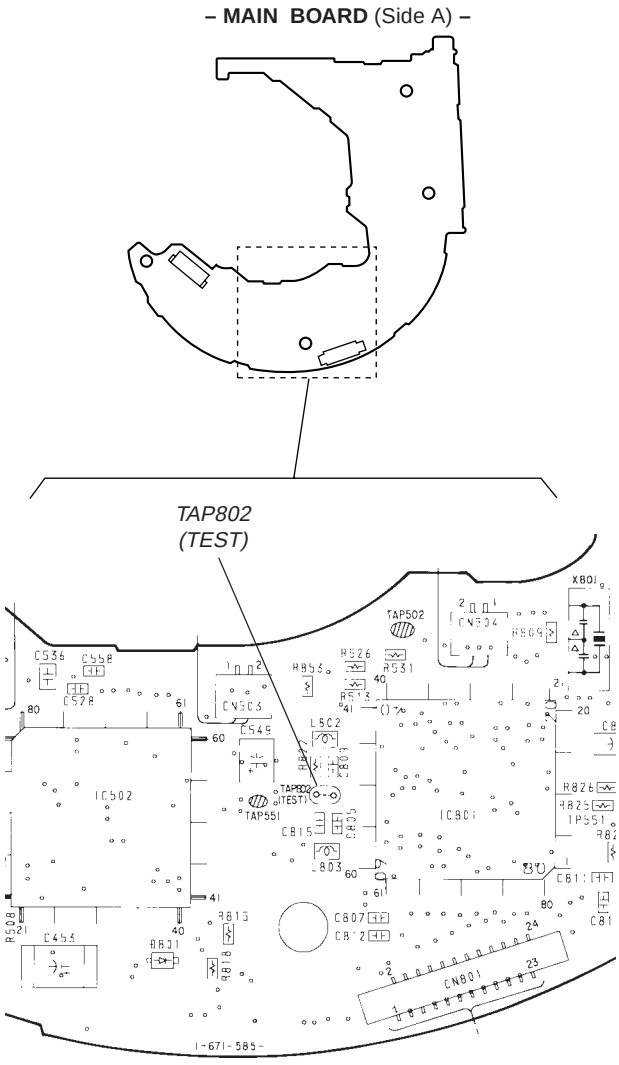


Fig. 2 Location of Test terminal

SECTION 5
ELECTRICAL ADJUSTMENTS

Precautions for Adjustment

1. Before beginning adjustment, set the equipment to service mode.
   After the completion of adjustment, be sure to reset the service mode.
   For more information, see "Service Mode (service program) " on page 8.
2. Perform adjustments in the order given.
3. Use YEDS-18 disc (Part No.: 3-702-101-01) unless otherwise indicated.
4. Power supply voltage requirement: DC2.5 V in battery terminal
   VOLUME knob : Minimum
   RESUME switch : OFF
   ESP switch : OFF
   AVLS switch : NORMAL
   HOLD switch : OFF

Before Beginning Adjustment

Set the equipment to service mode (See page 8) and check the following. If there is an error, repair the equipment.

• Checking of the sled motor

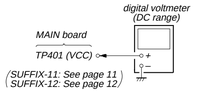
1. Open the upper panel.
2. Press the ▶▶I and I◀◀ keys and check that the optical pick-up can move smoothly without sluggishness or abnormal noise in innermost periphery → outermost periphery → innermost periphery
   ▶▶I : The optical pick-up moves outwardly.
   I◀◀ : The optical pick-up moves inwardly.

• Checking of focus searching

1. Open the upper panel.
2. Press the ▶II key. (Focus searching operation is activated continuously)
3. Check the object lens of the optical pick-up for smooth up/down motion without sluggishness or abnormal noise.
4. Press the ■ key.
   Check that focus searching operation is deactivated. If not, again press the ■ key slightly longer.

VCC Adjustment

Adjustment Procedure:



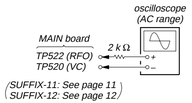
1. Set the equipment to service mode stop state. (See page 8)
2. Connect the digital voltmeter to TP401 (VCC) on the MAIN board.
3. Adjust RV401 on the MAIN board so that the reading on digital voltmeter goes 2.77 V.
   Specifications: 2.75 V to 2.8 V
4. After the completion of adjustment, reset service mode. (See page 8)

Adjustment Location: MAIN Board (SUFFIX-11: See page 11, SUFFIX-12: See page 12)

Focus bias Check

Condition:
• Hold the set in horizontal state.

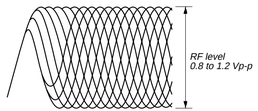
Check Procedure:



1. Set the equipment to service mode stop state. (See page 8)
2. Connect the oscilloscope to the test point TP522 (RFO) on the MAIN board.
3. Move the optical pick-up to the center by pressing the ▶▶I and I◀◀ keys.
4. Put the disc. (YEDS-18)
5. Press the ▶II key.
   From focus searching, focus is turned ON while entering CLV drawing-in mode. Tracking and sled are turned OFF.
6. Press the PLAY MODE key. (Both tracking and sled are turned ON)
7. Check the oscilloscope waveform is as shown below.
   A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.

RF Signal Reference Waveform (Eye Pattern)

VOLT/DIV : 200 mV (With the 10:1 probe in use)
TIME/DIV : 500 ns



To watch the eye pattern, set the oscilloscope to AC range and increase the vertical sensitivity of the oscilloscope for easy watching.

8. Stop revolving of the disc motor by pressing the ■ key.
9. After the completion of adjustment, reset service mode. (See page 8)

Checking Location: MAIN Board (SUFFIX-11: See page 11, SUFFIX-12: See page 12)

Focus/Tracking Gain Adjustment

A servo analayzer is necessary in order to perform this adjustment exactly.

> However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the optical pick-up follow-up relative to mechanical noise and mechanical shock when the 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.
• When gain is rased, the noise when 2-axis device operates increase.
• When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

This adjustment has to be performed upon replacing any of the following parts.
• Optical pick-up
• RV503 (Focus gain VR)
• RV502 (Tracking gain VR)

> Normally, be sure not to move RV503 (focus gain VR) and RV502 (tracking gain VR).

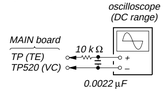
Adjustment procedure:

– Focus Gain Adjustment –

This adjustment is not performed.
If focus gain VR RV503 is turned, set to mechanical center.

Adjustment Location: MAIN Board (SUFFIX-11: See page 11, SUFFIX-12: See page 12)

– Tracking Gain Adjustment –
(perform at normal operation)



1. Place the optical pick-up level, horizontally. (If the optical pick-up is not level, the 2-axis device will be weighted and adjustment cannot be done)
2. Connect the oscilloscope to TP (TE) and TP520 (VC) on the MAIN board.
3. Set the disc (YEDS-18) and press the ▶II key.
4. Turn RV502 slightly clockwise (tracking gain drops) and obtain a waveform with a fundamental wave (waveform has large waves) as in Figure 1.
5. Turn RV502 slowly counterclockwise (tracking gain rises) until the fundamental wave disappears (no large waves) as in Figure 2.
6. Set RV502 to the position about 30˚ counterclockwise form the position obtained in step 5. If RV502 contact point is more than 90˚ counterclockwise from mechanical center, tracking gain is too high. In this case, readjust from step 4.
7. Press ▶▶I or I◀◀ key and observe the 100 track jump waveform. Check that no traverse waveform appears for both ▶▶I or I◀◀ directions. (See Figures 3 and 4)
   It is acceptable if the traverse waveform appears only now and then, but if it appears constantly, raise tracking gain slightly and check step 7 again.
8. Check that there is not abnormal amount of operation noise (white noise) from the 2-axis device. If there is, tracking gain is too high, readjust starting with step 4.

The waveforms are those measured with the oscilloscope set as shown below.
• VOLT/DIV: 500 mV
• TIME/DIV: 5 ms

• Waveform when tracking gain is lowered.
  Fundamental wave appears. (large waves)

Fig. 1

• Waveform when fundamental wave disappears. (no large waves)

Fig. 2

• Waveform with no traverse waveform during 100 track jump. (Brake application is smooth because of adjustment)

Fig. 3

• Waveform with traverse waveform during 100 track jump. (Brake application is poor because of adjustment)

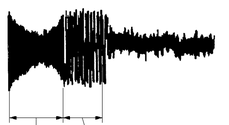
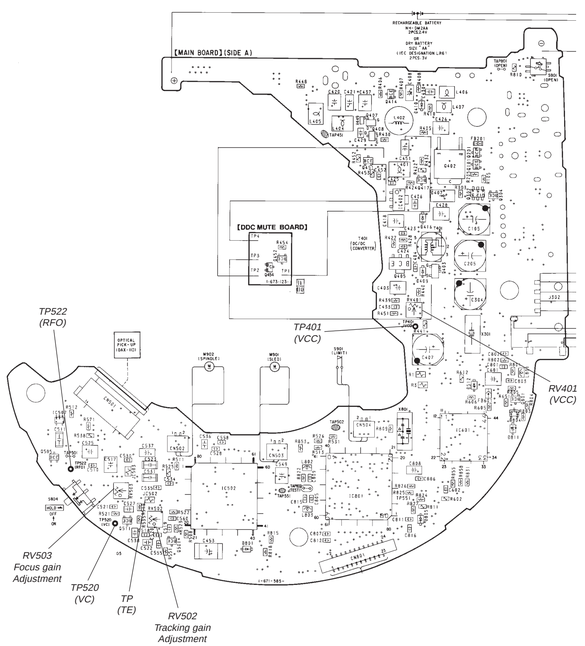


Fig. 4

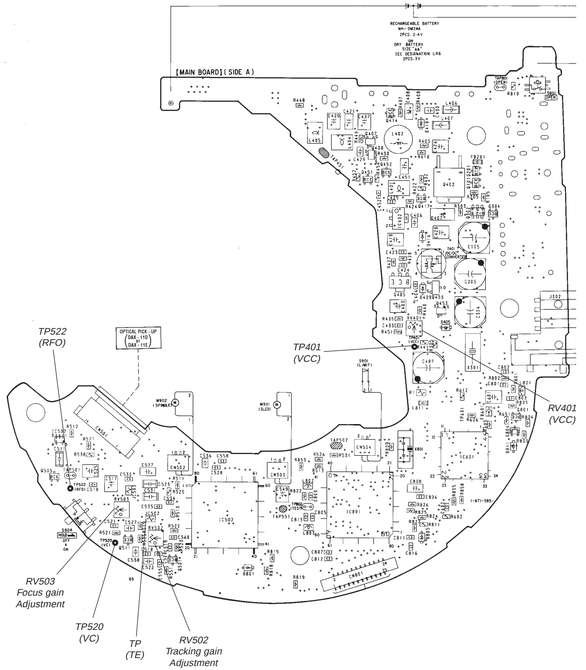
Adjustment Location: MAIN Board (SUFFIX-11: See page 11, SUFFIX-12: See page 12)

Adjustment and Checking Location:

– MAIN BOARD (Side A) – (SUFFIX-11)

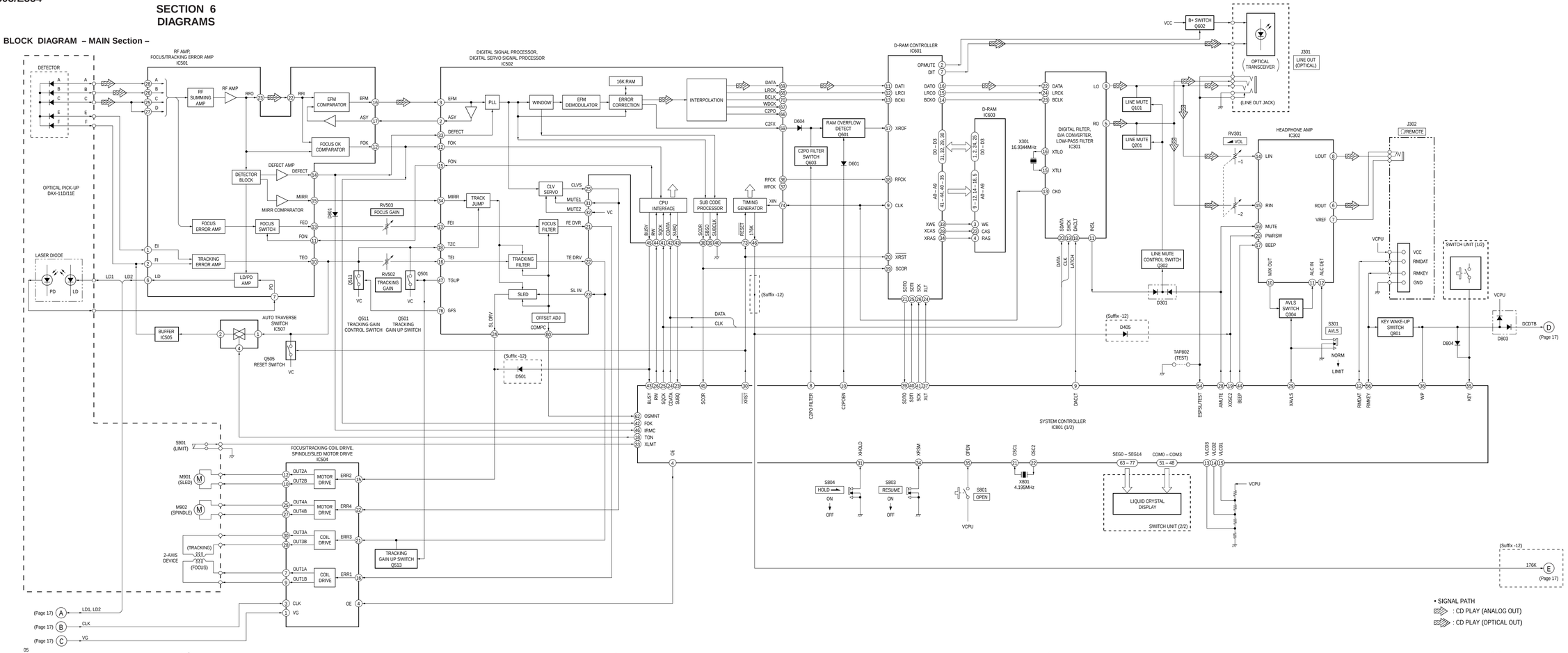


– MAIN BOARD (Side A) – (SUFFIX-12)

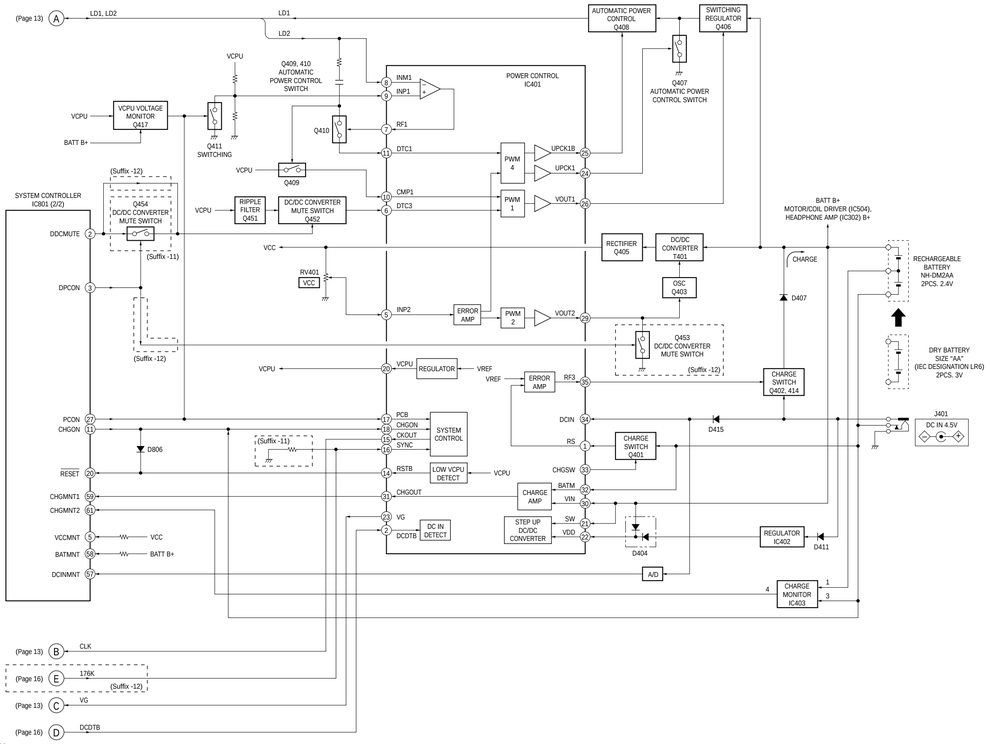


SECTION 6
DIAGRAMS

6-1. BLOCK DIAGRAM – MAIN Section –



6-2. BLOCK DIAGRAM – POWER SUPPLY Section –



05

6-3. IC PIN FUNCTION DESCRIPTION

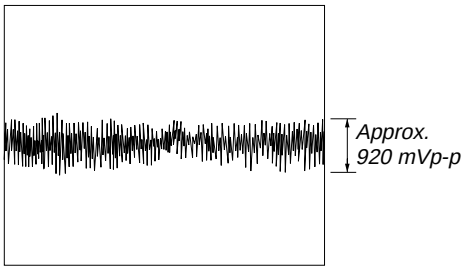
- **MAIN BOARD IC801 (SYSTEM CONTROLLER)**
  MC68HC05L24-SC440482CFU (SUFFIX-11), MC68HC05L24-SC440488CFU (SUFFIX-12)

Pin No.	Pin Name	I/O	Description
1	VDD	—	Power supply terminal (+3V)
2	DDCMUTE	O	DC/DC converter muting control signal output terminal
3	DPCON	O	DC/DC converter on/off selection signal output terminal
4	OE	O	Output enable signal output to the MPC17A51VMEL (IC504) "L" active
5	VCCMNT	I	Main DC/DC converter voltage (+2.75V) monitor input (A/D input)
6	MDL SL	I	Destination setting terminal Fixed at "L" in this set
7	LIGHT	O	Back light control signal output to the liquid crystal display on the switch unit "H": back light on Not used (open)
8	C2PO FILTER	O	C2PO (error condition monitor) filter on/off control signal output terminal
9	DACLT	O	Serial data latch pulse signal output to the D/A converter (IC301)
10	C2POEN	O	C2PO (error condition monitor) signal control output terminal "L": stop mode, "H": searching
11	CHGON	O	Charging on output to the MPC18A26VMEL (IC401) "L": charge on
12	RMDAT	I/O	Communication data in/out for the liquid crystal display with remote commander
13	VLCD3	O	Power supply output for the liquid crystal display bias
14	VLCD2	O	
15	VLCD1	O	
16	VSS	—	Ground terminal
17	VPP	—	Power supply terminal (0V)
18	TON	O	Traverse on/off control signal output to the auto traverse circuit
19	XOSC2	O	Standby control signal output to the headphone amplifier (IC302)
20	$\overline{\text{RESET}}$	I	System reset signal input from the MPC18A26VMEL (IC401) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
21	OSC1	I	Main system clock input terminal (4.195 MHz)
22	OSC2	O	Main system clock output terminal (4.195 MHz)
23	SUBQ	I	Sub-code Q data signal input from the BU9325BKS (IC502)
24	CDATA	O	Serial data output to the D/A converter (IC301) and BU9325BKS (IC502)
25	SQCK	O	Sub-code Q data reading clock signal output to the D/A converter (IC301) and BU9325BKS (IC502)
26	RW	O	Data read/write selection signal output to the BU9325BKS (IC502) "L": reading mode, "H": writing mode
27	PCON	O	Power on/off control signal output to the MPC18A26VMEL (IC401) "L": power on, "H": power off
28	AMUTE	O	Analog muting on/off control signal output terminal "H": muting on
29	XAVLS	I	AVLS (Automatic Volume Limiter System) switch (S301) input terminal "L": limit mode, "H": normal mode
30	$\overline{\text{XRST}}$	O	System reset signal output to the BU9325BKS (IC502) and D-RAM controller (IC601) "L": reset
31	XHOLD	I	HOLD switch (S804) input terminal "L": hold on, "H": hold off
32	XRCHG	I	Rechargeable battery pack detection switch input terminal "L": rechargeable battery pack in Not used (open)
33	XLMT	I	Sled limit-in detection switch (S901) input terminal The optical pick-up is inner position when "L"
34	XRSM	I	RESUME switch (S803) input terminal "L": resume on, "H": resume off
35	OPEN	I	CD door open/close detection switch (S801) input terminal The stop status is reset with the falling edge of input signal

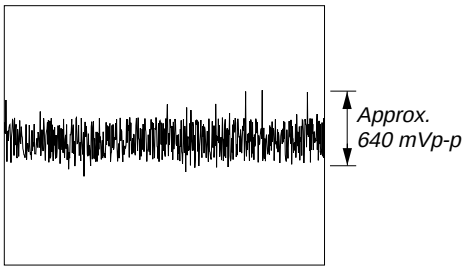
Pin No.	Pin Name	I/O	Description
36	WP	I	Wake-up control signal input terminal The stop status is reset with the falling edge of input signal
37	XLT	O	Serial data latch pulse signal output to the D-RAM controller (IC601) (for ESP)
38	XSOE	O	Serial data output enable signal output terminal (for ESP) Not used (pull up)
39	SDTO	I	Serial data input from the D-RAM controller (IC601) (for ESP)
40	SDTI	O	Serial data output to the D-RAM controller (IC601) (for ESP)
41	SCK	O	Serial data transfer clock signal output to the D-RAM controller (IC601) (for ESP)
42	FOK	I	Focus OK signal input from the RF amplifier (IC501) "L": NG, "H": OK
43	BUSY	I	Busy signal input from the BU9325BKS (IC502) "L": track jump mode, "H": servo loop on
44	BEEP	O	Beep sound output to the headphone amplifier (IC302)
45	SCOR	I	Sub-code sync (S0+S1) detection signal input from the BU9325BKS (IC502)
46	IRMC	I	Attenuate display selection signal input from the RF amplifier (IC501)
47	VDD	—	Power supply terminal (+3V)
48 to 51	COM3 to COM0	O	Common drive signal output to the liquid crystal display on the switch unit
52	VREFH	I	Reference voltage input terminal (+3V) (for A/D converter)
53	VREFL	I	Reference voltage input terminal (0V) (for A/D converter)
54	ESPSL/TEST	I	Service mode setting terminal "L": service mode, Normally: fixed at "H"
55	KEY	I	Key input from the switch unit (A/D input)
56	RMKEY	I	Key input from the headphone with remote commander (A/D input)
57	DCINMNT	I	DC in voltage detection input terminal (A/D input) Also used for DC IN detection
58	BATMNT	I	Battery voltage detection input terminal Also used for rechargeable battery/dry battery detection
59	CHGMNT1	I	Battery charging voltage detection input from the MPC18A26VMEL (IC401)
60	VSS	—	Ground terminal
61	CHGMNT2	I	Battery voltage detection input terminal (A/D input) Also used for rechargeable battery/dry battery detection
62	OSMNT	I	DSP offset voltage adjustment voltage monitor input from the BU9325BKS (IC502)
63 to 77	SEG0 to SEG14	O	Segment drive signal output to the liquid crystal display on the switch unit
78, 79	SEG15, SEG16	O	Segment drive signal output terminal Not used (open)
80	X9326	I/O	Error correction "L": quadruple correction, "H": double correction Fixed at "H" in this set

• Waveforms

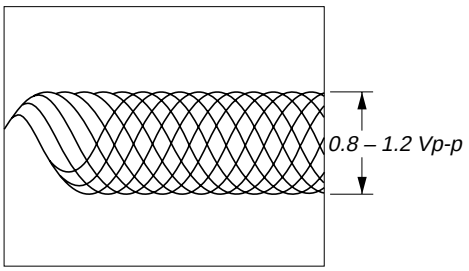
❶ IC501 ⑩ (TEO) (PLAY MODE)
500 mV/DIV, 1 ms/DIV



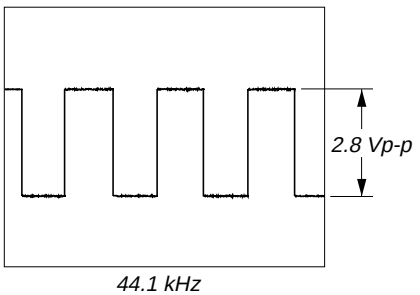
❷ IC501 ⑬ (FEO) (PLAY MODE)
500 mV/DIV, 10 ms/DIV



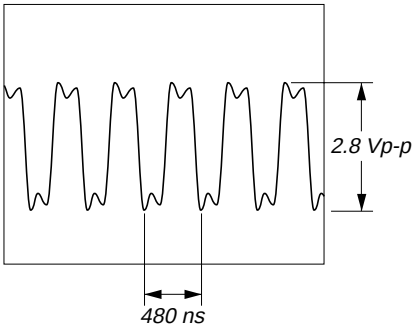
❸ IC501 ㉓ (RFO) (PLAY MODE)
500 mV/DIV, 1 µs/DIV



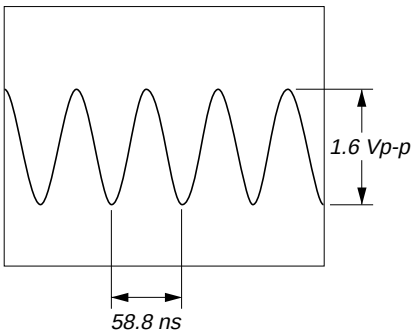
❹ IC502 ㊽ (LRCK) (PLAY MODE)
1 V/DIV, 10 µs/DIV



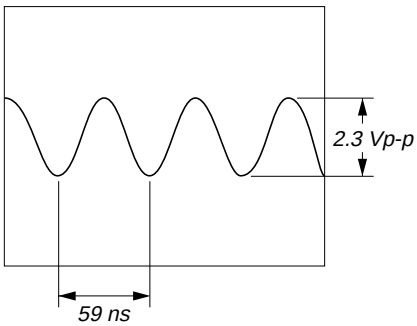
❺ IC502 ㉚ (BCLK)
1 V/DIV, 2 µs/DIV



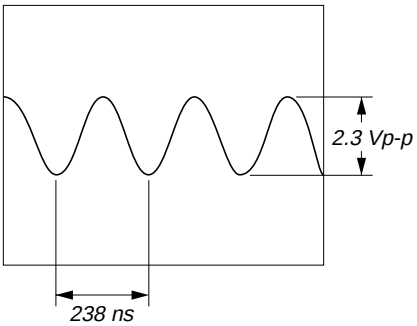
❻ IC502 ㉞ (XIN)
500 mV/DIV, 20 ns/DIV



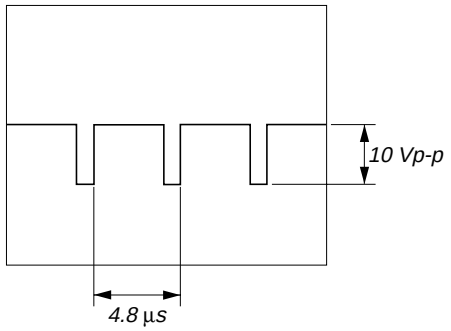
❼ IC301 ⑯ (XTLO)
1 V/DIV, 20 ns/DIV



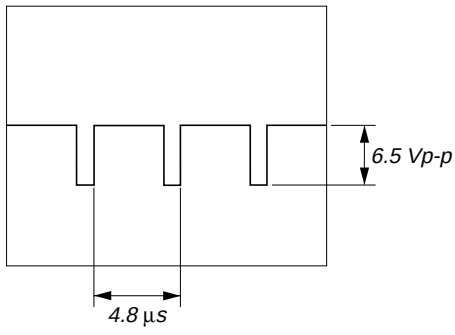
❽ IC801 ㉑ (OSC1)
1 V/DIV, 100 ns/DIV



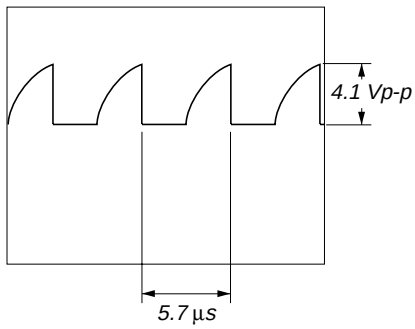
❾ Q405 Ⓑ
5 V/DIV, 2 µs/DIV



❿ Q405 Ⓒ
2 V/DIV, 2 µs/DIV



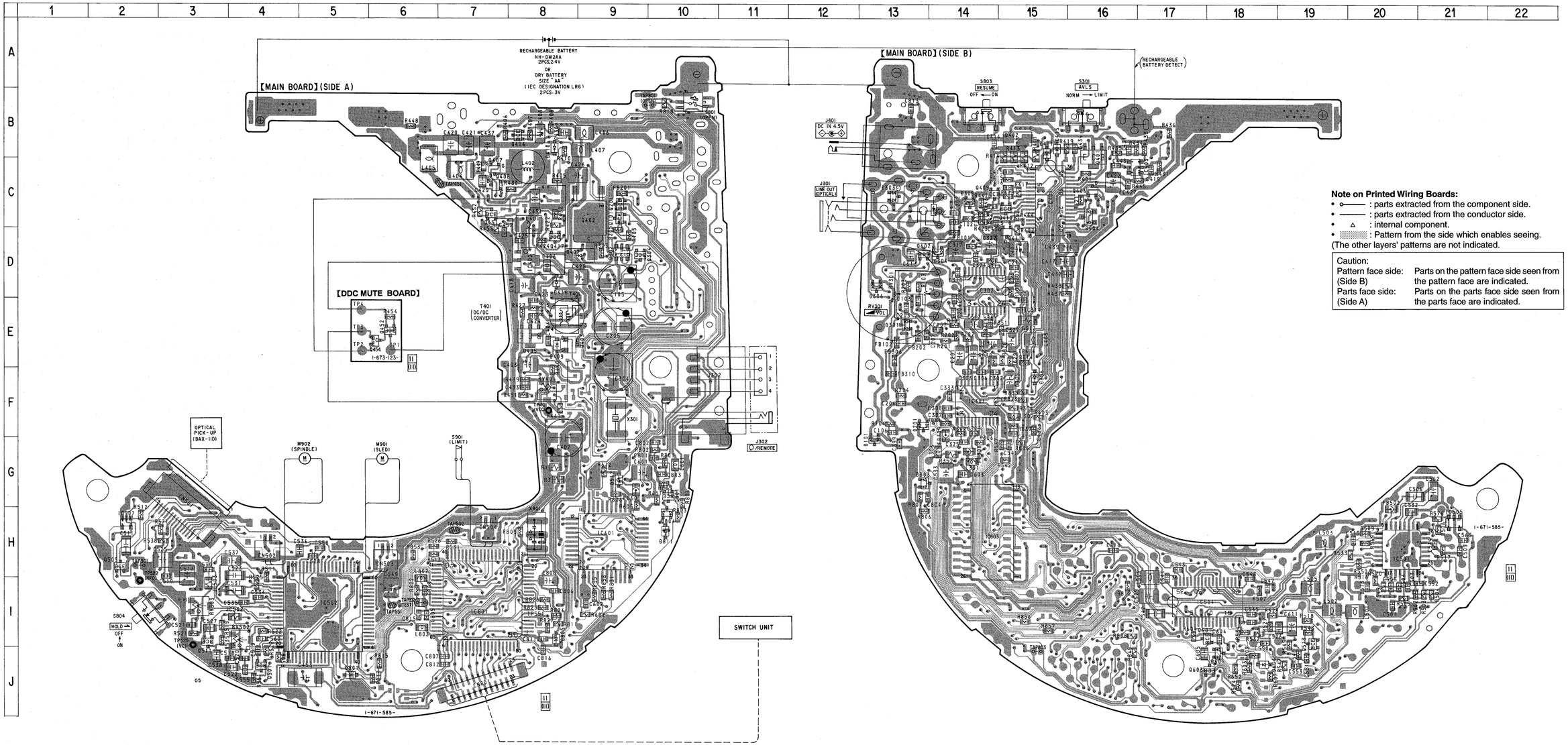
⓫ IC401 ⑮ (CKOUT)
2 V/DIV, 2 µs/DIV



6-4. PRINTED WIRING BOARDS (SUFFIX-11)

- **Semiconductor Location**

Ref. No.	Location
D101	G-13
D201	F-13
D301	E-13
D303	C-13
D304	D-14
D305	C-14
D3-6	D-13
D402	B-15
D404	C-16
D407	D-9
D409	E-8
D410	B-8
D411	B-15
D415	B-15
D416	D-8
D601	J-18
D604	J-18
D801	J-5
D803	G-13
D804	H-10
D805	I-8
D806	F-15
D811	H-10
IC301	F-14
IC302	D-14
IC401	C-15
IC402	D-8
IC403	C-17
IC501	H-20
IC502	I-5
IC504	I-18
IC505	H-21
IC507	H-2
IC601	H-9
IC603	H-14
IC801	I-7
Q101	C-9
Q201	C-9
Q302	D-9
Q304	D-9
Q401	B-16
Q402	C-9
Q403	E-8
Q405	E-8
Q406	C-16
Q407	C-7
Q408	C-7
Q409	C-14
Q410	C-15
Q411	D-15
Q414	B-8
Q417	D-8
Q451	C-7
Q452	E-6
Q454	E-6
Q501	J-4
Q505	H-2
Q511	I-3
Q513	I-19
Q601	I-18
Q602	D-13
Q603	J-18
Q801	G-10



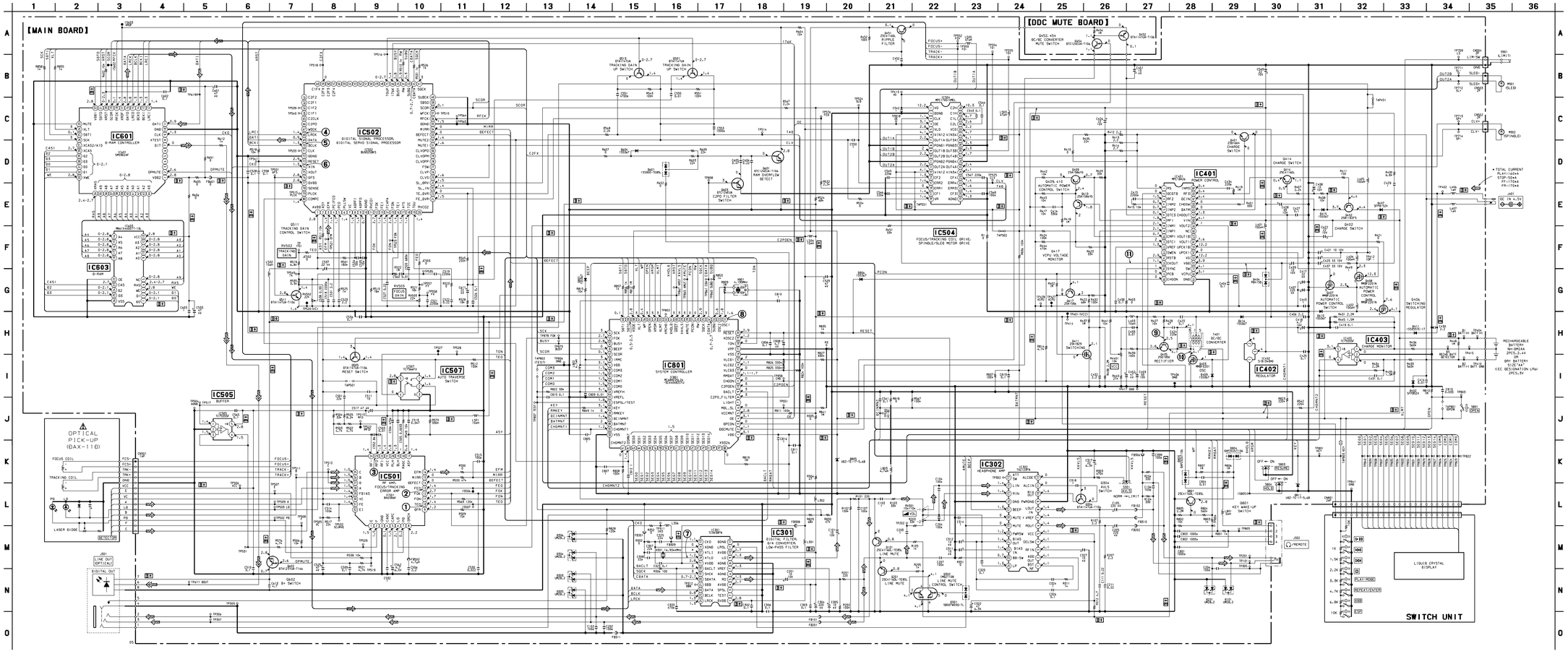
Note on Printed Wiring Boards:

- ○——: parts extracted from the component side.
- ——: parts extracted from the conductor side.
- △: internal component.
- ▨: Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

6-5. SCHEMATIC DIAGRAM (SUFFIX-11)



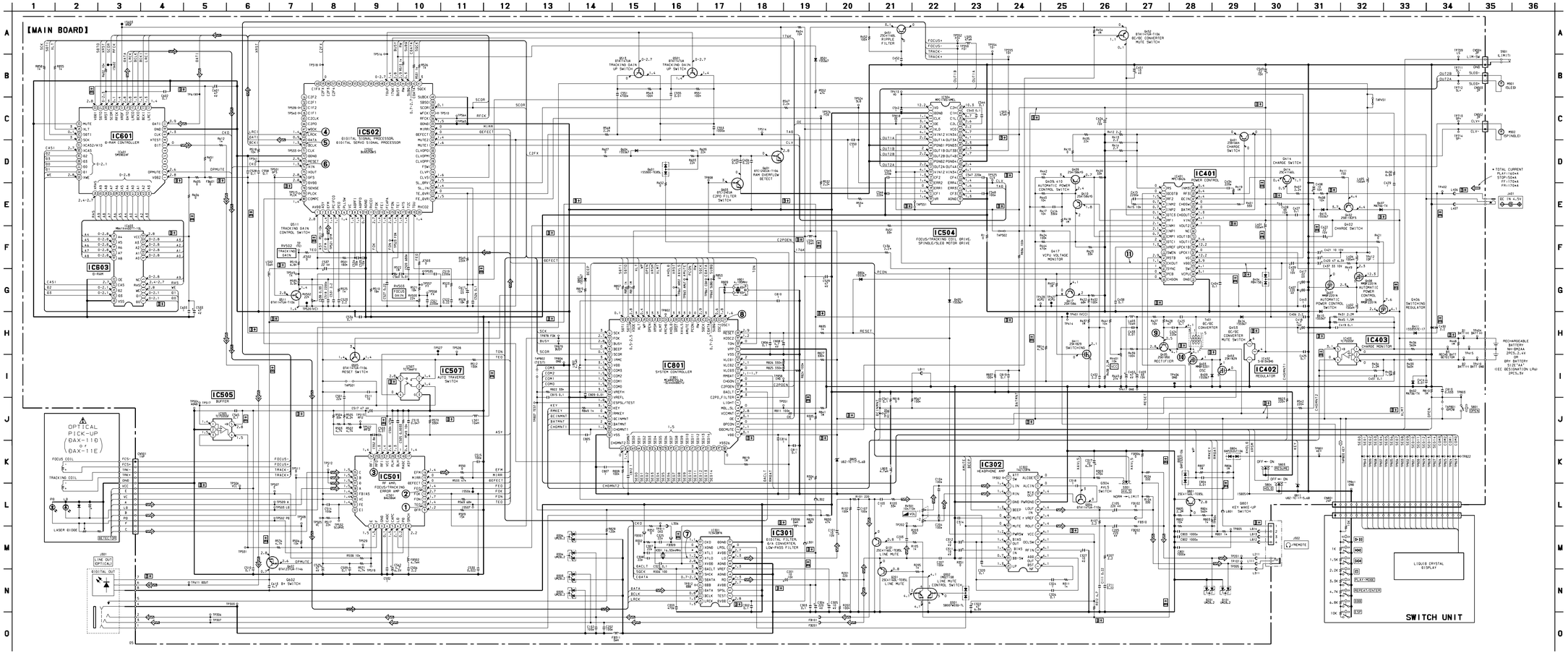
Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- : adjustment for repair.
- Power voltage is dc 4.5 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under conditions in service mode.
  no mark : CD PLAY
  ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : CD PLAY (ANALOG OUT)
  : CD PLAY (OPTICAL OUT)

6-6. SCHEMATIC DIAGRAM (SUFFIX-12)



Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF
  50 WV or less are not indicated except for electrolytics and tantaliums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.

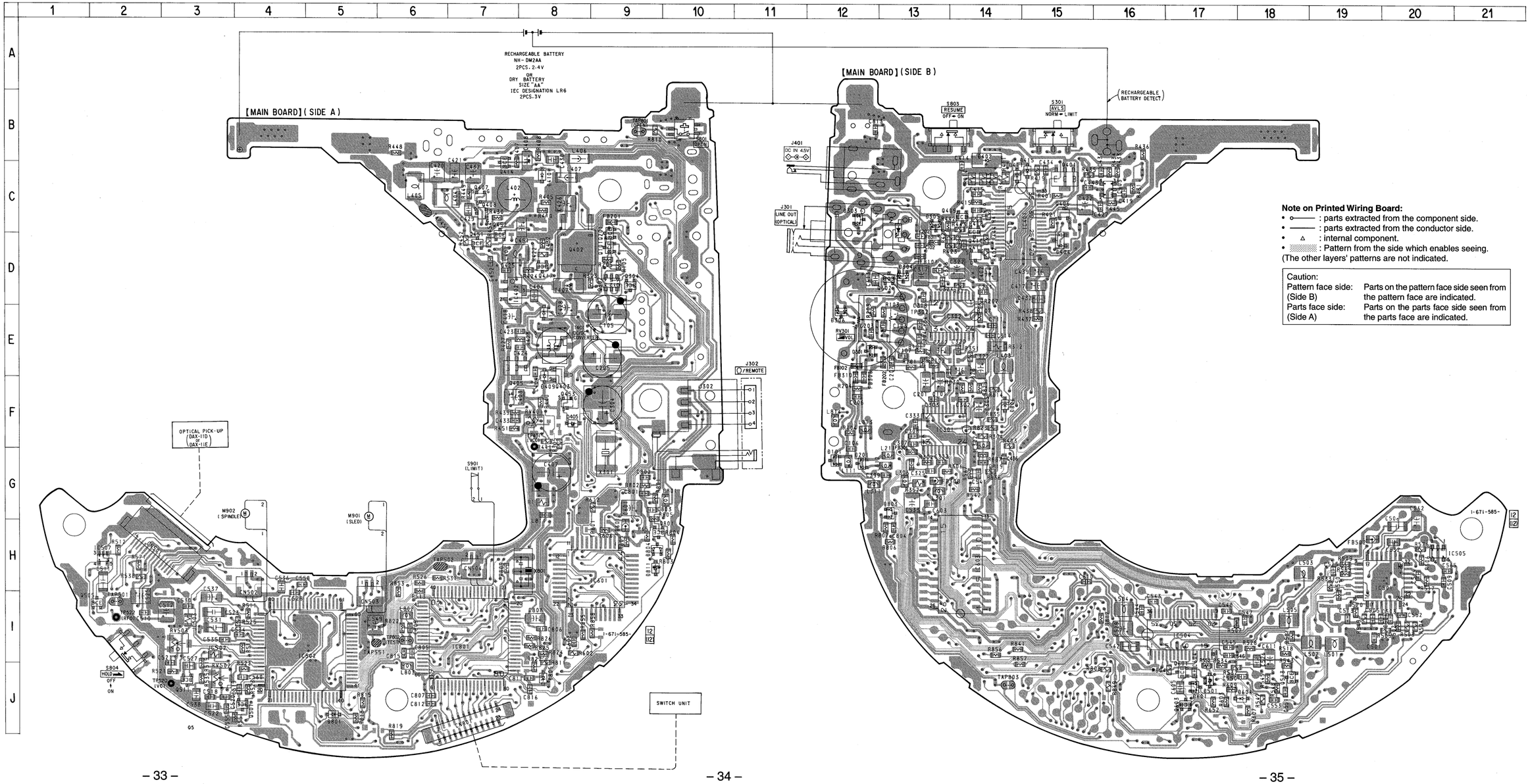
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 4.5 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under conditions in service mode.
  no mark : CD PLAY
  ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD PLAY (ANALOG OUT)
  ⇛ : CD PLAY (OPTICAL OUT)

6-7. PRINTED WIRING BOARD (SUFFIX-12)

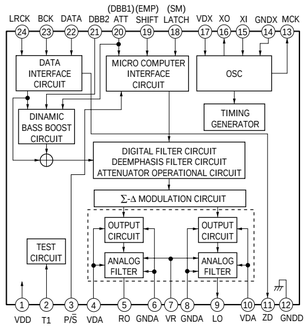
- **Semiconductor Location**

Ref. No.	Location
D101	G-12
D201	G-12
D301	E-12
D303	C-12
D304	D-13
D305	C-13
D306	D-12
D402	B-14
D404	D-15
D405	F-8
D407	D-8
D409	E-8
D410	C-8
D411	C-14
D415	C-15
D416	E-8
D501	J-17
D601	J-17
D604	J-18
D801	J-5
D803	G-13
D804	H-9
D805	J-8
D806	F-14
D811	H-9
IC301	F-13
IC302	E-14
IC401	C-14
IC402	D-7
IC403	C-16
IC501	H-20
IC502	I-4
IC504	I-17
IC505	H-20
IC507	H-2
IC601	H-9
IC603	H-14
IC801	I-7
J301	D-11
Q101	D-9
Q201	C-9
Q302	D-9
Q304	D-9
Q401	C-15
Q402	D-8
Q403	E-8
Q405	E-7
Q406	C-15
Q407	C-7
Q408	C-7
Q409	C-14
Q410	C-14
Q411	D-14
Q414	B-7
Q417	D-8
Q451	D-7
Q452	C-7
Q453	F-8
Q501	J-4
Q505	I-2
Q511	J-3
Q513	J-18
Q601	J-17
Q602	D-13
Q603	J-17
Q801	H-9

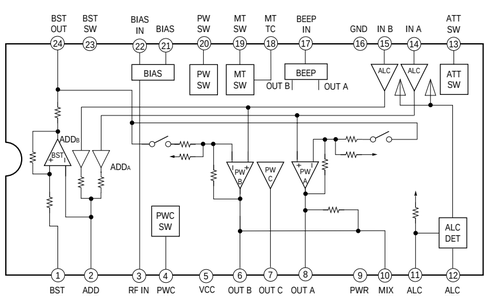


• IC Block Diagrams

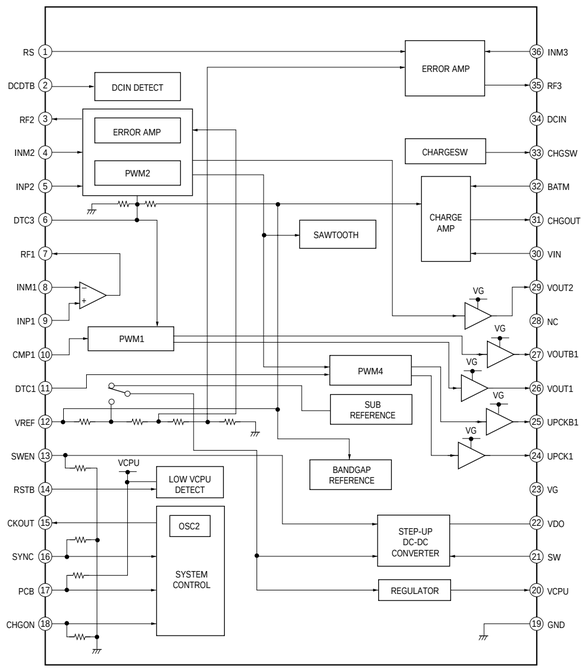
IC301 TC9438FNEL



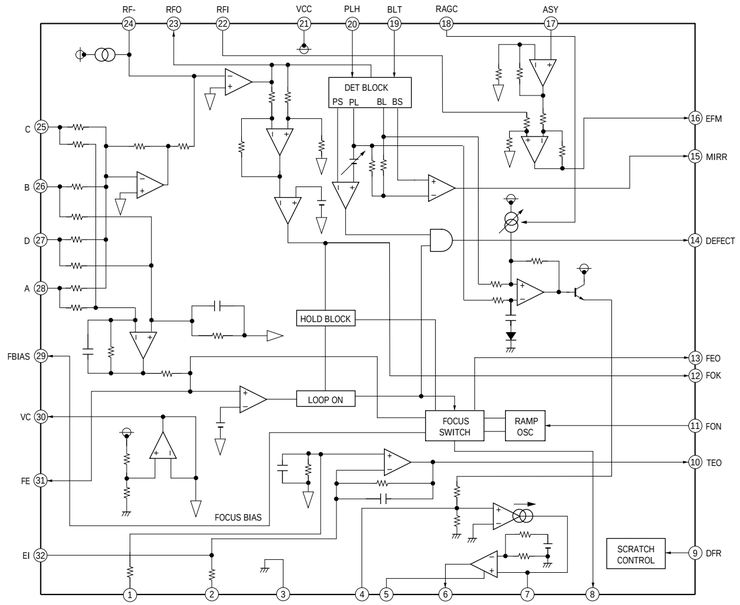
IC302 TA2120FN (EL)



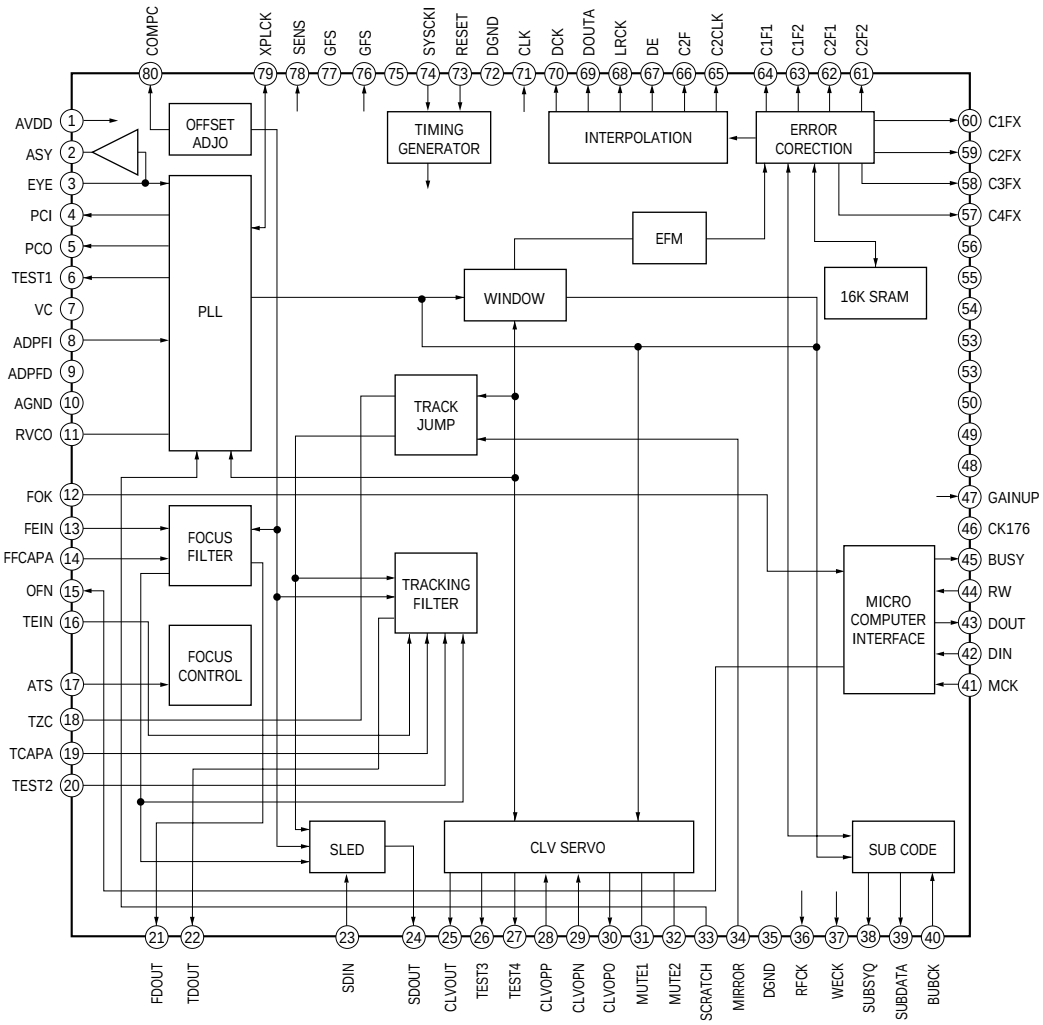
IC401 MPC18A26VMEL



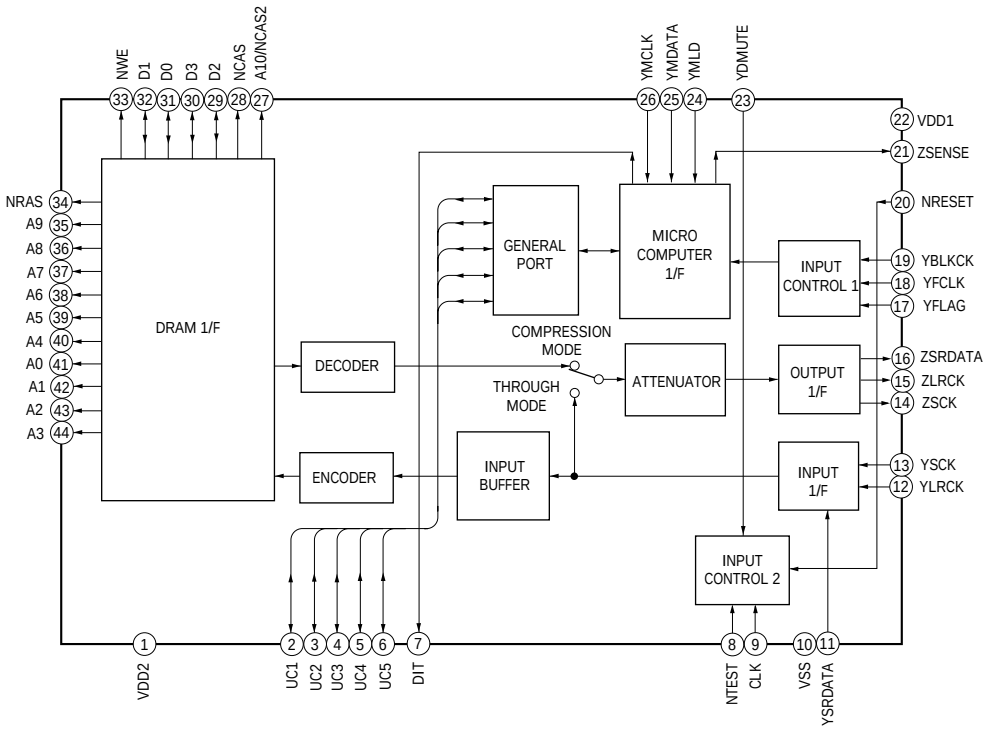
IC501 BA6386K



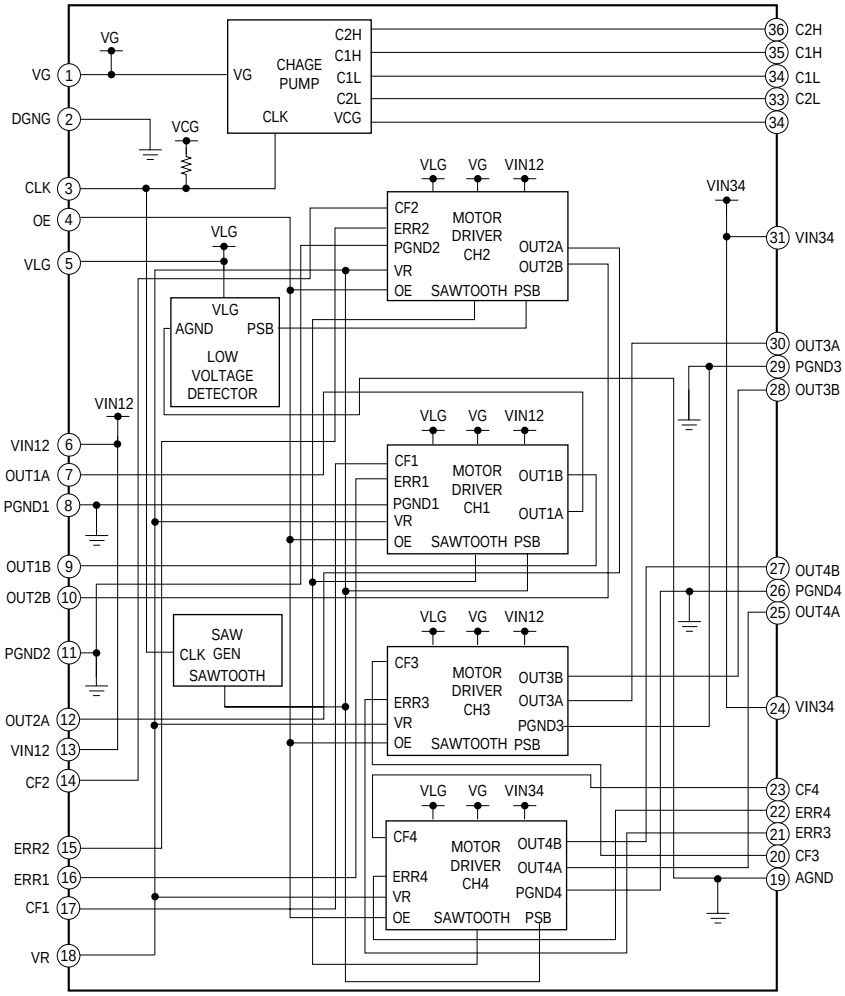
IC502 BU9325BKS



IC601 SM5902AF



IC504 MPC17A51VMEL



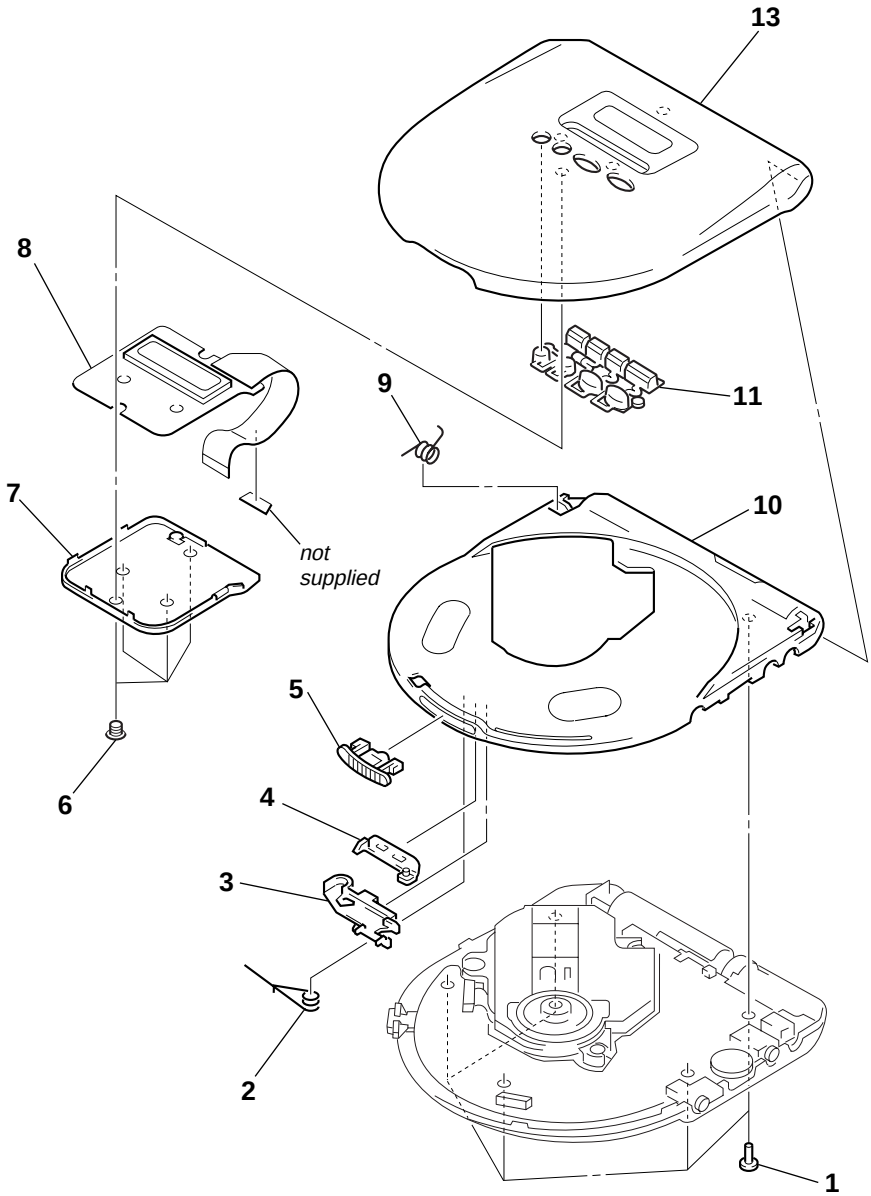
SECTION 7
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

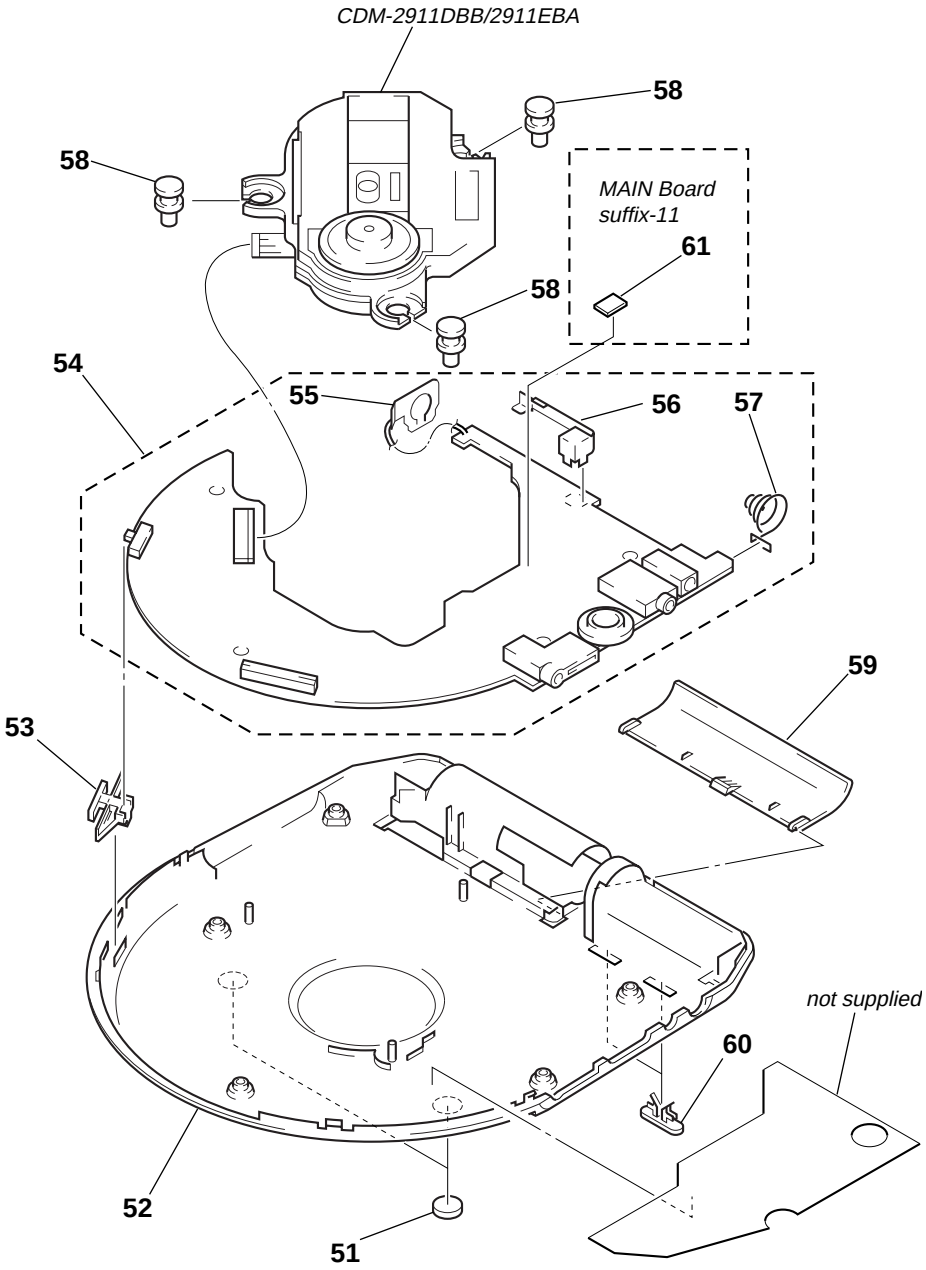
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

(1) CABINET SECTION-1



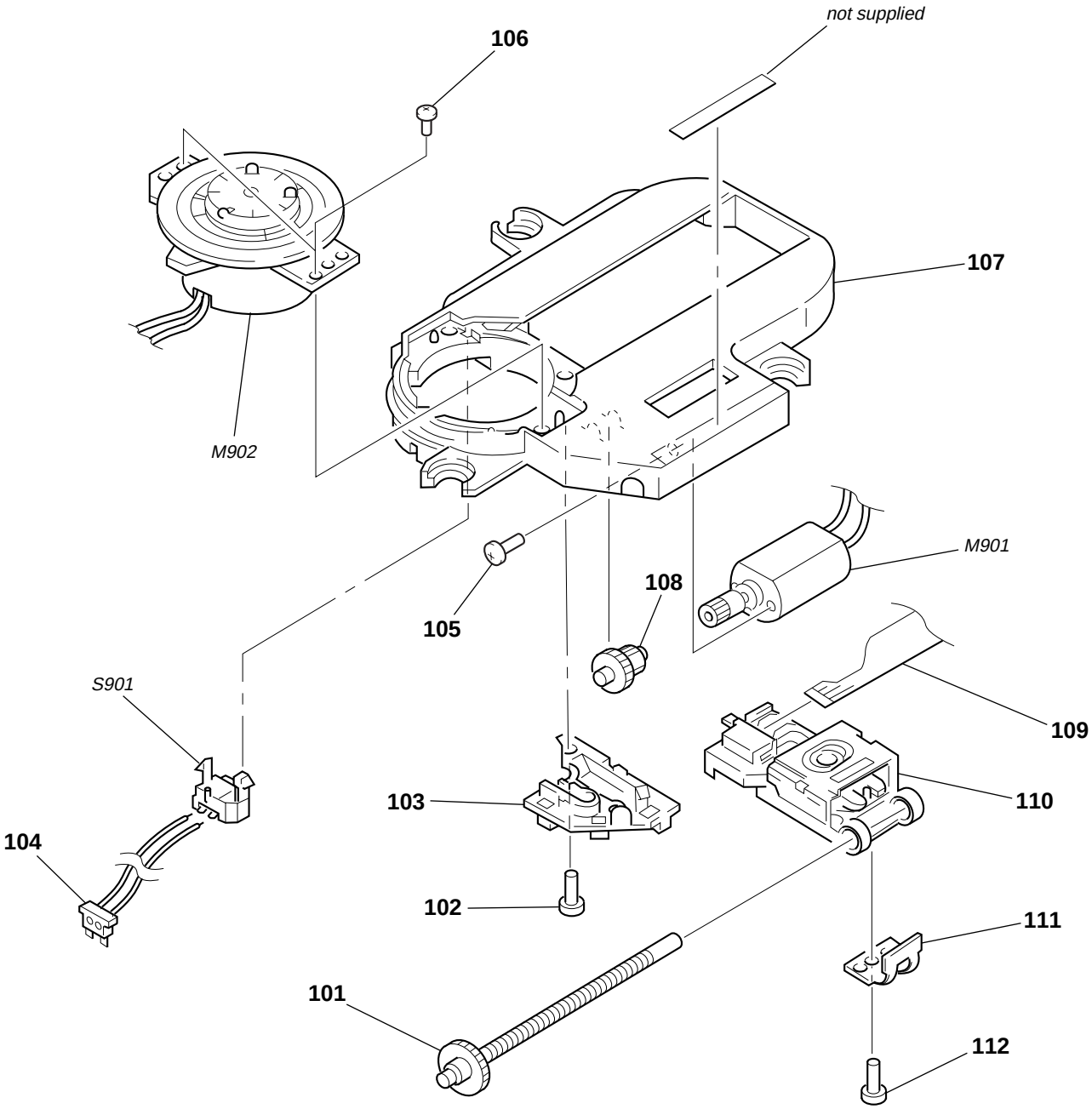
Ref. No.	Part No.	Description	Remark
1	4-982-491-01	SCREW (2X8), TAPPING	
2	4-993-128-01	SPRING (OPEN)	
3	4-993-125-01	BRACKET (LOCK)	
4	4-993-127-01	CLAW, LOCK	
5	4-993-126-11	KNOB (OPEN)	
6	3-375-114-31	SCREW	
7	4-211-639-01	COVER, LID (GRAY) . . . (BLUE)	
7	4-211-639-11	COVER, LID (WHITE) . . . (SILVER)	
8	1-475-997-11	SWITCH UNIT	
9	4-993-135-01	SPRING (FULL OPEN)	
10	X-4950-451-1	CABINET (UPPER) SUB ASSY	
11	4-211-638-01	BUTTON (OPR)	
13	X-4950-439-1	LID SUB ASSY, UPPER (SILVER) (D-E505)	
13	X-4950-438-1	LID SUB ASSY, UPPER (SILVER) (D-E554)	
13	X-4950-468-1	LID SUB ASSY, UPPER (BLUE) (D-E554)	

(2) CABINET SECTION-2



Ref. No.	Part No.	Description	Remark
51	4-966-278-01	FOOT, RUBBER	
52	4-993-129-01	CABINET (LOWER)	
53	4-993-131-01	KNOB (HOLD)	
54	A-3021-144-A	MAIN BOARD, COMPLETE	
55	4-993-132-01	TERMINAL BOARD (+), BATTERY	
56	4-993-134-01	PLATE, CHARGE DETECTION	
57	4-993-133-21	SPRING (-), BATTERY TERMINAL	
58	4-993-138-01	INSULATOR	
59	4-993-130-01	LID, BATTERY CASE	
60	4-984-751-01	KNOB (AVLS)	
* 61	1-673-123-11	DDC MUTE BOARD (MAIN BOARD SUFFIX-11)	

(3) MECHANISM DECK SECTION (CDM-2911DBB/2911EBA)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	A-3303-970-A	SCREW ASSY, FEED	
102	3-318-203-11	SCREW (B1.7), TAPPING	
103	4-972-163-04	SPRING, SLED	
104	1-783-093-11	LEAD (WITH CONNECTOR)	
105	7-627-850-17	SCREW, PRECISION +P 1.4X2.5	
106	3-719-401-11	SCREW (B1.7), TAPPING	
* 107	4-984-320-01	CHASSIS	
108	4-974-003-01	GEAR (B)	
109	1-667-512-11	SLIDE FLEXIBLE BOARD	
⚠110	X-4948-977-1	OPTICAL PICK-UP (DAX-11D)	
⚠110	X-4950-476-1	OPTICAL PICK-UP (DAX-11E)	
111	4-972-165-01	RACK	
112	4-973-631-01	SCREW	
M901	A-3311-902-A	MOTOR ASSY, SLED	
M902	A-3320-642-A	MOTOR ASSY, TURN TABLE (SPINDLE)	
S901	1-571-099-21	SWITCH (1 KEY) (LIMIT)	

DDC MUTE **MAIN**

SECTION 8
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  AUS : Australian model
  CND : Canadian model
  CH : Chinese model
  E13 : 220 – 230V AC area in E model
  E33 : 100 – 240 V AC area in E model
  HK : Hong Kong model
  JEW : Tourist model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-673-123-11	DDC MUTE BOARD (MAIN BOARD SUFFIX-11)			
		**********			
		< TRANSISTOR >			
Q452	8-729-028-74	TRANSISTOR DTA114TUA-T106			
Q454	8-729-029-06	TRANSISTOR DTC124EUA-T106			
		< RESISTOR >			
R454	1-216-857-11	METAL CHIP	1M	5%	1/16W
**********					
	A-3021-144-A	MAIN BOARD, COMPLETE			
		**********			
	4-993-132-01	TERMINAL BOARD (+), BATTERY			
	4-993-133-01	SPRING (-), BATTERY TERMINAL (SUFFIX-11)			
	4-993-133-21	SPRING (-), BATTERY TERMINAL (SUFFIX-12)			
	4-993-134-01	PLATE, CHARGE DETECTION			
		< CAPACITOR/RESISTOR >			
C101	1-104-851-11	TANTALUM CHIP	10uF	20%	10V
C102	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C103	1-115-156-11	CERAMIC CHIP	1uF		10V
C104	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C105	1-113-690-11	ELECT CHIP	220uF	20%	4V
C106	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (SUFFIX-11)
C107	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C111	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C201	1-104-851-11	TANTALUM CHIP	10uF	20%	10V
C202	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C203	1-115-156-11	CERAMIC CHIP	1uF		10V
C204	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C205	1-113-690-11	ELECT CHIP	220uF	20%	4V
C206	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (SUFFIX-11)
C207	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C211	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C302	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C303	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C304	1-113-690-11	ELECT CHIP	220uF	20%	4V
C305	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C306	1-164-156-11	CERAMIC CHIP	0.1uF		25V (SUFFIX-11)
C307	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C308	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C311	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C312	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C314	1-115-156-11	CERAMIC CHIP	1uF		10V
C317	1-104-852-11	TANTALUM CHIP	22uF	20%	6.3V
C318	1-115-156-11	CERAMIC CHIP	1uF		10V
C320	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C322	1-110-569-11	TANTALUM CHIP	47uF	20%	6.3V
C323	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C324	1-115-156-11	CERAMIC CHIP	1uF		10V
C325	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C326	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C327	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C333	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C399	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (SUFFIX-11)
C402	1-104-908-11	TANTALUM CHIP	47uF	20%	4V
C403	1-113-682-11	TANTALUM CHIP	33uF	20%	10V
C404	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C406	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C407	1-113-690-11	ELECT CHIP	220uF	20%	4V
C408	1-104-851-11	TANTALUM CHIP	10uF	20%	10V
C414	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C415	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C416	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C417	1-104-847-11	TANTALUM CHIP	22uF	20%	4V
C418	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C419	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C420	1-110-569-11	TANTALUM CHIP	47uF	20%	6.3V (SUFFIX-12)
C420	1-113-682-11	TANTALUM CHIP	33uF	20%	10V (SUFFIX-11)
C421	1-104-851-11	TANTALUM CHIP	10uF	20%	10V
C422	1-104-852-11	TANTALUM CHIP	22uF	20%	10V
C423	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C424	1-164-816-11	CERAMIC CHIP	220PF	2%	50V

Ref. No.	Part No.	Description			Remark
C425	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C426	1-104-852-11	TANTALUM CHIP	22uF	20%	10V
C427	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C428	1-113-682-11	TANTALUM CHIP	33uF	20%	10V
C429	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C430	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C431	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C432	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C433	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C434	1-164-816-11	CERAMIC CHIP	220PF	2%	50V
C436	1-216-825-11	METAL CHIP	2.2K	5%	1/16W (SUFFIX-12)
C437	1-113-682-11	TANTALUM CHIP	33uF	20%	10V
C438	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C439	1-104-851-11	TANTALUM CHIP	10uF	20%	10V
C443	1-115-156-11	CERAMIC CHIP	1uF		10V
C451	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C452	1-115-156-11	CERAMIC CHIP	1uF		10V
C501	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C504	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C505	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C506	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C509	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C510	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C511	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C513	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C514	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C515	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C517	1-104-908-11	TANTALUM CHIP	47uF	20%	4V
C518	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C519	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C520	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C521	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C522	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C523	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C525	1-104-908-11	TANTALUM CHIP	47uF	20%	4V
C526	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C527	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C528	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C529	1-104-908-11	TANTALUM CHIP	47uF	20%	4V
C530	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C531	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C532	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C533	1-104-908-11	TANTALUM CHIP	47uF	20%	4V
C534	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C535	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C536	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C537	1-104-847-11	TANTALUM CHIP	22uF	20%	4V
C538	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C541	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C542	1-113-677-11	CERAMIC CHIP	1uF		25V
C543	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C544	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C545	1-164-816-11	CERAMIC CHIP	220PF	2%	50V
C546	1-164-816-11	CERAMIC CHIP	220PF	2%	50V
C547	1-164-816-11	CERAMIC CHIP	220PF	2%	50V
C548	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C549	1-104-852-11	TANTALUM CHIP	22uF	20%	10V
C550	1-115-156-11	CERAMIC CHIP	1uF		10V
C551	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C552	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C553	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C555	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C558	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C560	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C562	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C565	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C601	1-104-908-11	TANTALUM CHIP	47uF	20%	4V
C602	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C603	1-164-346-11	CERAMIC CHIP	1uF		16V
C604	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C605	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C611	1-104-847-11	TANTALUM CHIP	22uF	20%	4V
C613	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C801	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C802	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C803	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C804	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C805	1-115-156-11	CERAMIC CHIP	1uF		10V
C806	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C807	1-115-156-11	CERAMIC CHIP	1uF		10V
C808	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C809	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C810	1-115-156-11	CERAMIC CHIP	1uF		10V
C811	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C812	1-115-156-11	CERAMIC CHIP	1uF		10V
C813	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C815	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C816	1-115-156-11	CERAMIC CHIP	1uF		10V
C819	1-164-156-11	CERAMIC CHIP	0.1uF		25V

< CONNECTOR >

CN501	1-779-761-21	CONNECTOR, FPC (ZIF)
CN502	1-784-342-31	HOUSING, CONNECTOR 2P
CN503	1-784-342-21	HOUSING, CONNECTOR 2P
CN504	1-784-342-11	HOUSING, CONNECTOR 2P
CN801	1-766-492-21	CONNECTOR, FFC/FPC (ZIF) 24P

< DIODE >

D101	8-719-039-99	DIODE UMZ8.2T
D201	8-719-039-99	DIODE UMZ8.2T
D301	8-719-988-78	DIODE SB007W03Q
D303	8-719-039-99	DIODE UMZ8.2T
D304	8-719-039-99	DIODE UMZ8.2T
D305	8-719-039-99	DIODE UMZ8.2T
D306	8-719-039-99	DIODE UMZ8.2T
D402	8-719-050-90	DIODE MA736-TX (SUFFIX-12)
D402	8-719-313-73	DIODE SFPB-52 (SUFFIX-11)
D404	8-719-067-19	DIODE RB415D-T146
D405	8-719-049-09	DIODE 1SS367-T3SONY (SUFFIX-12)
D407	8-719-050-90	DIODE MA736-TX (SUFFIX-12)
D407	8-719-313-73	DIODE SFPB-52 (SUFFIX-11)
D409	8-719-049-09	DIODE 1SS367-T3SONY
D410	8-719-049-09	DIODE 1SS367-T3SONY

MAIN

Ref. No.	Part No.	Description	Remark
D411	8-719-988-61	DIODE 1SS355TE-17	
D415	8-719-049-09	DIODE 1SS367-T3SONY	
D416	8-719-049-09	DIODE 1SS367-T3SONY	
D501	8-719-049-09	DIODE 1SS367-T3SONY (SUFFIX-12)	
D601	8-719-024-81	DIODE 1SS300-TE85L	
D604	8-719-049-09	DIODE 1SS367-T3SONY	
D801	8-719-049-09	DIODE 1SS367-T3SONY	
D803	8-719-941-09	DIODE DAP202U	
D804	8-719-941-09	DIODE DAP202U	
D805	8-719-158-15	DIODE RD5.6S-B	
D806	8-719-049-09	DIODE 1SS367-T3SONY	
D811	8-719-158-15	DIODE RD5.6S-B	
		< FERRITE BEAD/COIL/RESISTOR>	
FB101	1-500-238-22	FERRITE 0uH	
FB102	1-216-864-11	METAL CHIP 0 5% 1/16W	(SUFFIX-12)
FB102	1-414-760-21	INDUCTOR CHIP 0uH (SUFFIX-11)	
FB201	1-500-238-22	FERRITE 0uH	
FB202	1-216-864-11	METAL CHIP 0 5% 1/16W	(SUFFIX-12)
FB202	1-414-760-21	INDUCTOR CHIP 0uH (SUFFIX-11)	
FB301	1-414-228-11	INDUCTOR CHIP 0uH	
FB306	1-216-864-11	METAL CHIP 0 5% 1/16W	(SUFFIX-12)
FB306	1-414-760-21	INDUCTOR CHIP 0uH (SUFFIX-11)	
FB308	1-414-235-22	INDUCTOR CHIP 0uH	
FB309	1-414-235-22	INDUCTOR CHIP 0uH (SUFFIX-11)	
FB309	1-500-444-11	FERRITE 0uH (SUFFIX-12)	
FB311	1-414-760-21	INDUCTOR CHIP 0uH	
FB502	1-412-002-31	INDUCTOR CHIP 4.7uH	
FB601	1-216-295-00	SHORT 0	
		< IC >	
IC301	8-759-483-60	IC TC9438FNEL	
IC302	8-759-522-87	IC TA2120FN (EL)	
IC401	8-759-483-61	IC MPC18A26VMEL	
IC402	8-759-464-04	IC S-81340HG-KJ-T1	
IC403	8-759-387-31	IC TC75S55F (TE85R)	
IC501	8-759-432-83	IC BA6386K	
IC502	8-759-564-92	IC BU9325BKS	
IC504	8-759-483-62	IC MPC17A51VMEL	
IC505	8-759-387-31	IC TC75S55F (TE85R)	
IC507	8-759-082-60	IC TC7S66FU	
IC601	8-759-484-37	IC SM5902AF	
IC603	8-759-527-01	IC MN41X4400TT-10L	
IC801	8-759-565-44	IC MC68HC05L24-SC440482CFU	(SUFFIX-11)
IC801	8-759-576-65	IC MC68HC05L24-SC440488CFU	(SUFFIX-12)
		< JACK/DIODE >	
J301	8-749-015-13	DIODE GP1FB200TK (LINE OUT (OPTICAL))	
J302	1-778-368-31	JACK, HEADPHONE (🎧/REMOTE)	
J401	1-778-153-21	JACK, DC(POLARITY UNIFIED TYPE)	(DC IN 4.5V)
		< SHORT >	
JC502	1-216-295-00	SHORT 0	
JC503	1-216-295-00	SHORT 0	
		< COIL/FERRITE BEAD >	
L111	1-414-916-11	FERRITE 0uH (SUFFIX-12)	
L211	1-414-916-11	FERRITE 0uH (SUFFIX-12)	
L301	1-414-916-11	FERRITE 0uH	
L302	1-414-916-11	FERRITE 0uH	
L306	1-414-916-11	FERRITE 0uH	
L311	1-414-916-11	FERRITE 0uH (SUFFIX-12)	
L401	1-414-434-11	INDUCTOR 100uH	
L402	1-414-449-11	INDUCTOR CHIP 100uH	
L403	1-414-398-11	INDUCTOR 10uH	
L404	1-414-434-11	INDUCTOR 100uH	
L405	1-414-434-11	INDUCTOR 100uH	
L406	1-414-392-21	INDUCTOR 1uH (SUFFIX-11)	
L406	1-500-451-11	FERRITE 0uH (SUFFIX-12)	
L407	1-414-392-21	INDUCTOR 1uH (SUFFIX-11)	
L407	1-500-451-11	FERRITE 0uH (SUFFIX-12)	
L501	1-414-398-11	INDUCTOR 10uH	
L502	1-414-398-11	INDUCTOR 10uH	
L503	1-414-402-11	INDUCTOR 47uH	
L504	1-414-398-11	INDUCTOR 10uH	
L505	1-414-402-11	INDUCTOR 47uH	
L801	1-414-916-11	FERRITE 0uH (SUFFIX-12)	
L802	1-412-002-31	INDUCTOR CHIP 4.7uH	
L803	1-412-002-31	INDUCTOR CHIP 4.7uH	
L811	1-500-444-11	FERRITE 0uH (SUFFIX-12)	
L812	1-414-916-11	FERRITE 0uH (SUFFIX-12)	
L813	1-414-916-11	FERRITE 0uH (SUFFIX-12)	
L814	1-414-916-11	FERRITE 0uH (SUFFIX-12)	
		< TRANSISTOR >	
Q101	8-729-231-74	TRANSISTOR 2SC4116-GL	
Q201	8-729-231-74	TRANSISTOR 2SC4116-GL	
Q302	8-729-907-39	TRANSISTOR IMD2	
Q304	8-729-028-74	TRANSISTOR DTA114TUA-T106	
Q401	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q402	8-729-921-93	TRANSISTOR 2SB1182F5-QR	
Q403	8-729-044-10	FET MMBF0201NLT1	
Q405	8-729-320-66	TRANSISTOR 2SD1870	
Q406	8-729-043-46	FET MMBF2201NT1	
Q407	8-729-043-46	FET MMBF2201NT1	
Q408	8-729-043-46	FET MMBF2201NT1	
Q409	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q410	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q411	8-729-028-26	FET 2SK1829 (TE85L)	
Q414	8-729-231-74	TRANSISTOR 2SC4116-GL	
Q417	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q451	8-729-231-74	TRANSISTOR 2SC4116-GL	
Q452	8-729-028-74	TRANSISTOR DTA114TUA-T106 (SUFFIX-12)	
Q453	8-729-028-26	FET 2SK1829 (TE85L) (SUFFIX-12)	
Q501	8-729-028-74	TRANSISTOR DTA114TUA-T106	
Q505	8-729-028-74	TRANSISTOR DTA114TUA-T106	
Q511	8-729-028-74	TRANSISTOR DTA114TUA-T106	
Q513	8-729-028-74	TRANSISTOR DTA114TUA-T106	
Q601	8-729-029-06	TRANSISTOR DTC124EUA-T106	
Q602	8-729-924-28	TRANSISTOR DTA123YU	

Ref. No.	Part No.	Description			Remark
Q603	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q801	8-729-231-74	TRANSISTOR	2SC4116-GL		
		< RESISTOR >			
R1	1-216-295-00	SHORT	0		
R3	1-216-295-00	SHORT	0 (SUFFIX-11)		
R101	1-216-813-11	METAL CHIP	220	5%	1/16W
R102	1-216-845-11	METAL CHIP	100K	5%	1/16W
R103	1-216-839-11	METAL CHIP	33K	5%	1/16W
R104	1-216-815-11	METAL CHIP	330	5%	1/16W
R105	1-216-821-11	METAL CHIP	1K	5%	1/16W
R107	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R201	1-216-813-11	METAL CHIP	220	5%	1/16W
R202	1-216-845-11	METAL CHIP	100K	5%	1/16W
R203	1-216-839-11	METAL CHIP	33K	5%	1/16W
R204	1-216-815-11	METAL CHIP	330	5%	1/16W
R205	1-216-821-11	METAL CHIP	1K	5%	1/16W
R207	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R302	1-216-864-11	METAL CHIP	0	5%	1/16W
R303	1-216-853-11	METAL CHIP	470K	5%	1/16W
R304	1-216-805-11	METAL CHIP	47	5%	1/16W
R305	1-216-864-11	METAL CHIP	0	5%	1/16W
R306	1-216-809-11	METAL CHIP	100	5%	1/16W
R311	1-216-821-11	METAL CHIP	1K	5%	1/16W
R312	1-216-142-00	RES, CHIP	4.7	5%	1/8W
R351	1-216-864-11	METAL CHIP	0	5%	1/16W
R352	1-216-295-00	SHORT	0		
R401	1-216-815-11	METAL CHIP	330	5%	1/16W
R402	1-216-857-11	METAL CHIP	1M	5%	1/16W
R403	1-216-864-11	METAL CHIP	0	5%	1/16W (SUFFIX-11)
R405	1-216-837-11	METAL CHIP	22K	5%	1/16W
R407	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R408	1-216-833-11	METAL CHIP	10K	5%	1/16W
R410	1-216-864-11	METAL CHIP	0	5%	1/16W
R411	1-216-029-00	METAL CHIP	150	5%	1/10W
R412	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R413	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R414	1-216-302-00	METAL CHIP	2.7	5%	1/10W
R415	1-216-833-11	METAL CHIP	10K	5%	1/16W
R417	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
R418	1-216-857-11	METAL CHIP	1M	5%	1/16W
R419	1-216-857-11	METAL CHIP	1M	5%	1/16W
R420	1-218-728-11	METAL CHIP	33K	0.5%	1/16W
R421	1-216-864-11	METAL CHIP	0	5%	1/16W
R422	1-218-891-11	RES, CHIP	68K	0.5%	1/16W
R423	1-216-839-11	METAL CHIP	33K	5%	1/16W
R424	1-216-845-11	METAL CHIP	100K	5%	1/16W
R427	1-216-833-11	METAL CHIP	10K	5%	1/16W
R428	1-216-805-11	METAL CHIP	47	5%	1/16W
R430	1-218-867-11	RES, CHIP	6.8K	0.5%	1/16W
R431	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R432	1-218-895-11	RES, CHIP	100K	0.5%	1/16W
R433	1-218-913-91	RES, CHIP	560K	0.5%	
R434	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R435	1-220-800-91	RES, CHIP	1.5M	0.5%	
R436	1-218-913-91	RES, CHIP	560K	0.5%	
R437	1-216-857-11	METAL CHIP	1M	5%	1/16W
R438	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R439	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R440	1-218-881-11	RES, CHIP	27K	0.5%	1/16W
R441	1-216-833-11	METAL CHIP	10K	5%	1/16W
R442	1-216-833-11	METAL CHIP	10K	5%	1/16W
R443	1-216-833-11	METAL CHIP	10K	5%	1/16W
R444	1-216-853-11	METAL CHIP	470K	5%	1/16W
R445	1-220-800-91	RES, CHIP	1.5M	0.5%	
R448	1-216-857-11	METAL CHIP	1M	5%	1/16W
R449	1-218-446-11	METAL CHIP	1	5%	1/16W
R451	1-216-839-11	METAL CHIP	33K	5%	1/16W
R452	1-216-845-11	METAL CHIP	100K	5%	1/16W
R454	1-216-857-11	METAL CHIP	1M	5%	1/16W (SUFFIX-12)
R501	1-216-848-11	METAL CHIP	180K	5%	1/16W
R502	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R503	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R504	1-216-839-11	METAL CHIP	33K	5%	1/16W
R505	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R506	1-216-833-11	METAL CHIP	10K	5%	1/16W
R509	1-216-835-11	METAL CHIP	15K	5%	1/16W
R510	1-218-877-11	RES, CHIP	18K	0.5%	1/16W
R511	1-216-833-11	METAL CHIP	10K	5%	1/16W
R512	1-216-845-11	METAL CHIP	100K	5%	1/16W
R513	1-216-821-11	METAL CHIP	1K	5%	1/16W
R517	1-216-837-11	METAL CHIP	22K	5%	1/16W
R518	1-216-833-11	METAL CHIP	10K	5%	1/16W
R519	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R521	1-216-836-11	METAL CHIP	18K	5%	1/16W
R522	1-216-857-11	METAL CHIP	1M	5%	1/16W
R523	1-216-864-11	METAL CHIP	0	5%	1/16W
R524	1-216-843-11	METAL CHIP	68K	5%	1/16W (SUFFIX-11)
R525	1-216-821-11	METAL CHIP	1K	5%	1/16W
R526	1-216-821-11	METAL CHIP	1K	5%	1/16W
R528	1-216-836-11	METAL CHIP	18K	5%	1/16W
R531	1-216-821-11	METAL CHIP	1K	5%	1/16W
R532	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R533	1-216-841-11	METAL CHIP	47K	5%	1/16W
R534	1-216-864-11	METAL CHIP	0	5%	1/16W
R535	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R538	1-216-833-11	METAL CHIP	10K	5%	1/16W
R542	1-218-748-11	METAL CHIP	220K	0.5%	1/16W
R543	1-216-845-11	METAL CHIP	100K	5%	1/16W
R545	1-216-849-11	METAL CHIP	220K	5%	1/16W
R547	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R548	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R549	1-216-833-11	METAL CHIP	10K	5%	1/16W
R550	1-216-864-11	METAL CHIP	0	5%	1/16W
R551	1-216-845-11	METAL CHIP	100K	5%	1/16W
R552	1-216-841-11	METAL CHIP	47K	5%	1/16W (SUFFIX-12)
R567	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R569	1-216-843-11	METAL CHIP	68K	5%	1/16W (SUFFIX-12)
R569	1-216-846-11	METAL CHIP	120K	5%	1/16W (SUFFIX-11)
R570	1-216-851-11	METAL CHIP	330K	5%	1/16W

MAIN

Ref. No.	Part No.	Description			Remark
R571	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R576	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R602	1-216-833-11	METAL CHIP	10K	5%	1/16W
R603	1-216-837-11	METAL CHIP	22K	5%	1/16W
R604	1-216-833-11	METAL CHIP	10K	5%	1/16W
R605	1-216-864-11	METAL CHIP	0	5%	1/16W
R606	1-216-864-11	METAL CHIP	0	5%	1/16W
R607	1-216-864-11	METAL CHIP	0	5%	1/16W
R609	1-216-837-11	METAL CHIP	22K	5%	1/16W
R612	1-216-821-11	METAL CHIP	1K	5%	1/16W
R651	1-216-864-11	METAL CHIP	0	5%	1/16W
R652	1-216-864-11	METAL CHIP	0	5%	1/16W
R801	1-216-821-11	METAL CHIP	1K	5%	1/16W
R802	1-216-833-11	METAL CHIP	10K	5%	1/16W
R803	1-216-821-11	METAL CHIP	1K	5%	1/16W
R804	1-216-854-11	METAL CHIP	560K	5%	1/16W
R805	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R806	1-216-857-11	METAL CHIP	1M	5%	1/16W
R807	1-216-857-11	METAL CHIP	1M	5%	1/16W
R808	1-216-845-11	METAL CHIP	100K	5%	1/16W
R809	1-216-857-11	METAL CHIP	1M	5%	1/16W
R810	1-216-857-11	METAL CHIP	1M	5%	1/16W
R811	1-216-845-11	METAL CHIP	100K	5%	1/16W
R812	1-216-857-11	METAL CHIP	1M	5%	1/16W
R814	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R815	1-216-833-11	METAL CHIP	10K	5%	1/16W
R818	1-216-864-11	METAL CHIP	0	5%	1/16W
R819	1-216-857-11	METAL CHIP	1M	5%	1/16W
R822	1-218-883-11	RES, CHIP	33K	0.5%	1/16W
R823	1-216-849-11	METAL CHIP	220K	5%	1/16W
R824	1-216-845-11	METAL CHIP	100K	5%	1/16W
R825	1-216-851-11	METAL CHIP	330K	5%	1/16W
R826	1-216-851-11	METAL CHIP	330K	5%	1/16W
R827	1-216-851-11	METAL CHIP	330K	5%	1/16W
R828	1-218-897-11	RES, CHIP	120K	0.5%	1/16W
R829	1-218-891-11	RES, CHIP	68K	0.5%	1/16W
R830	1-218-887-11	RES, CHIP	47K	0.5%	1/16W
R835	1-216-821-11	METAL CHIP	1K	5%	1/16W
R836	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R837	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R841	1-216-857-11	METAL CHIP	1M	5%	1/16W
R849	1-216-821-11	METAL CHIP	1K	5%	1/16W
R853	1-216-821-11	METAL CHIP	1K	5%	1/16W
R855	1-216-821-11	METAL CHIP	1K	5%	1/16W
R856	1-216-821-11	METAL CHIP	1K	5%	1/16W
R857	1-216-821-11	METAL CHIP	1K	5%	1/16W
R858	1-216-821-11	METAL CHIP	1K	5%	1/16W
		< VARIABLE RESISTOR >			
RV301	1-225-468-21	RES, VAR, CARBON 10K/10K (◢ VOL)			
RV401	1-241-395-11	RES, ADJ, METAL GLAZE 10K			
RV502	1-223-996-21	RES, CARBON ADJ VAR 22K			
RV503	1-223-996-21	RES, CARBON ADJ VAR 22K			
		< SWITCH >			
S301	1-762-078-11	SWITCH, SLIDE (AVLS)			
S801	1-692-366-31	SWITCH, PUSH (1 KEY) (OPEN)			
S803	1-762-078-11	SWITCH, SLIDE (RESUME)			
S804	1-762-078-11	SWITCH, SLIDE (HOLD ◢)			
		< TRANSFORMER >			
T401	1-431-557-11	TRANSFORMER, DC-DC CONVERTER			
		< VIBRATOR >			
X301	1-767-605-11	VIBRATOR, LITHIUM TANTALATE (16.9344MHz)			
X801	1-767-192-11	VIBRATOR, CERAMIC (4.195MHz)			

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		MISCELLANEOUS
		**********
8	1-475-997-11	SWITCH UNIT
109	1-667-512-11	SLIDE FLEXIBLE BOARD
⚠110	X-4948-977-1	OPTICAL PICK-UP (DAX-11D)
⚠110	X-4950-476-1	OPTICAL PICK-UP (DAX-11E)
104	1-783-093-11	LEAD (WITH CONNECTOR)
M901	A-3311-902-A	MOTOR ASSY, SLED
M902	A-3320-642-A	MOTOR ASSY, TURN TABLE (SPINDLE)
S901	1-571-099-21	SWITCH (1 KEY) (LIMIT)

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		ACCESSORIES & PACKING MATERIALS
		**********
⚠	1-467-007-21	ADAPTOR, AC (AC-E455) (AUS)
⚠	1-467-009-21	ADAPTOR, AC (AC-E455) (CND)
⚠	1-467-550-11	ADAPTOR, AC (AC-E455A) (E33, JEW)
⚠	1-473-116-35	ADAPTOR, AC (AC-E455D) (E13)
⚠	1-475-622-11	ADAPTOR, AC (AC-E455) (CH)
⚠	1-475-623-11	ADAPTOR, AC (AC-E455) (HK)
	1-475-994-11	REMOTE CONTROL UNIT (RM-DM31L)
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (E33, JEW)
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (E13)
	3-864-732-01	MANUAL, INSTRUCTION (JAPANESE, ENGLISH) (JEW)
	3-864-732-11	MANUAL, INSTRUCTION (SPANISH) (E33, JEW)
	3-864-732-21	MANUAL, INSTRUCTION (ENGLISH) (CND, E33, AUS, JEW)
	3-864-732-31	MANUAL, INSTRUCTION (FRENCH) (CND, JEW)
	3-864-732-41	MANUAL, INSTRUCTION (KOREAN) (JEW)
	3-864-732-51	MANUAL, INSTRUCTION (CHINESE) (JEW)
	3-864-733-11	MANUAL, INSTRUCTION (CHINESE) (E13, HK)
	3-864-733-21	MANUAL, INSTRUCTION (ENGLISH) (E13, HK, CH)
	3-864-733-31	MANUAL, INSTRUCTION (CHINESE) (CH)
	4-993-659-01	CASE, CARRYING
	8-953-272-90	HEADPHONE MDR-ED136SP//K SET

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

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